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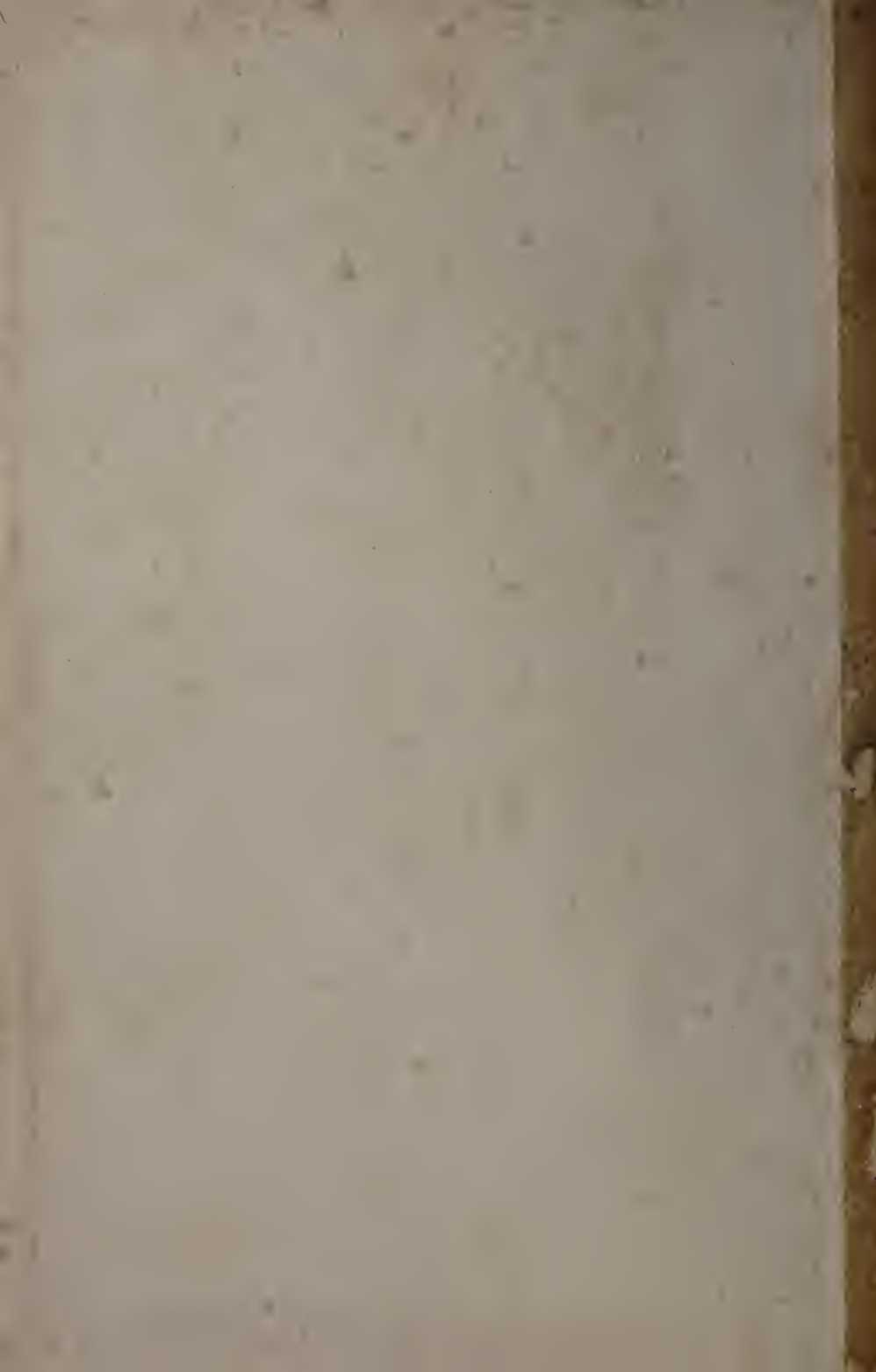
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1880

PERU

WASHIAN



 OBSEQUIO DE
CARLOS MACKEHENIE Y DE LA FUENTE





PERU

Geographical Miles
0 25 50 75 100 200
English Miles
0 25 50 75 100 200
Railways open
" projected

78 Longitude West 76 from Greenwich

82

80

78

76

74

72

70

68

London: Sampson Low, Munster, Sample & Rivington

Edinburgh: W & A Bell

PERU.

BY

CLEMENTS R. MARKHAM, C.B.

WITH ILLUSTRATIONS.

London :

SAMPSON LOW, MARSTON, SEARLE, & RIVINGTON,
CROWN BUILDINGS, 188, FLEET STREET.

1880.

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LONDON :
GILBERT AND RIVINGTON, PRINTERS,
ST. JOHN'S SQUARE.

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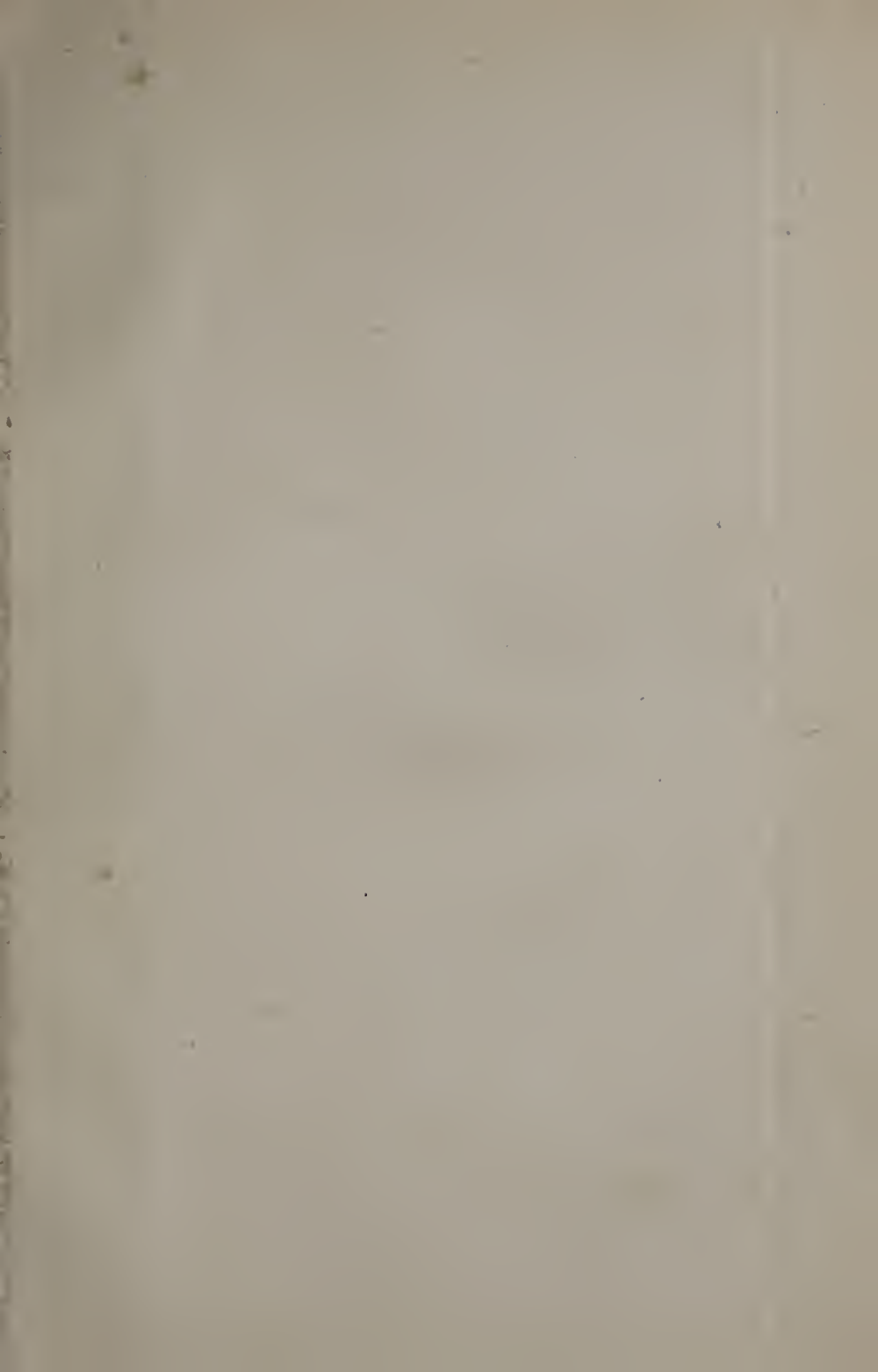
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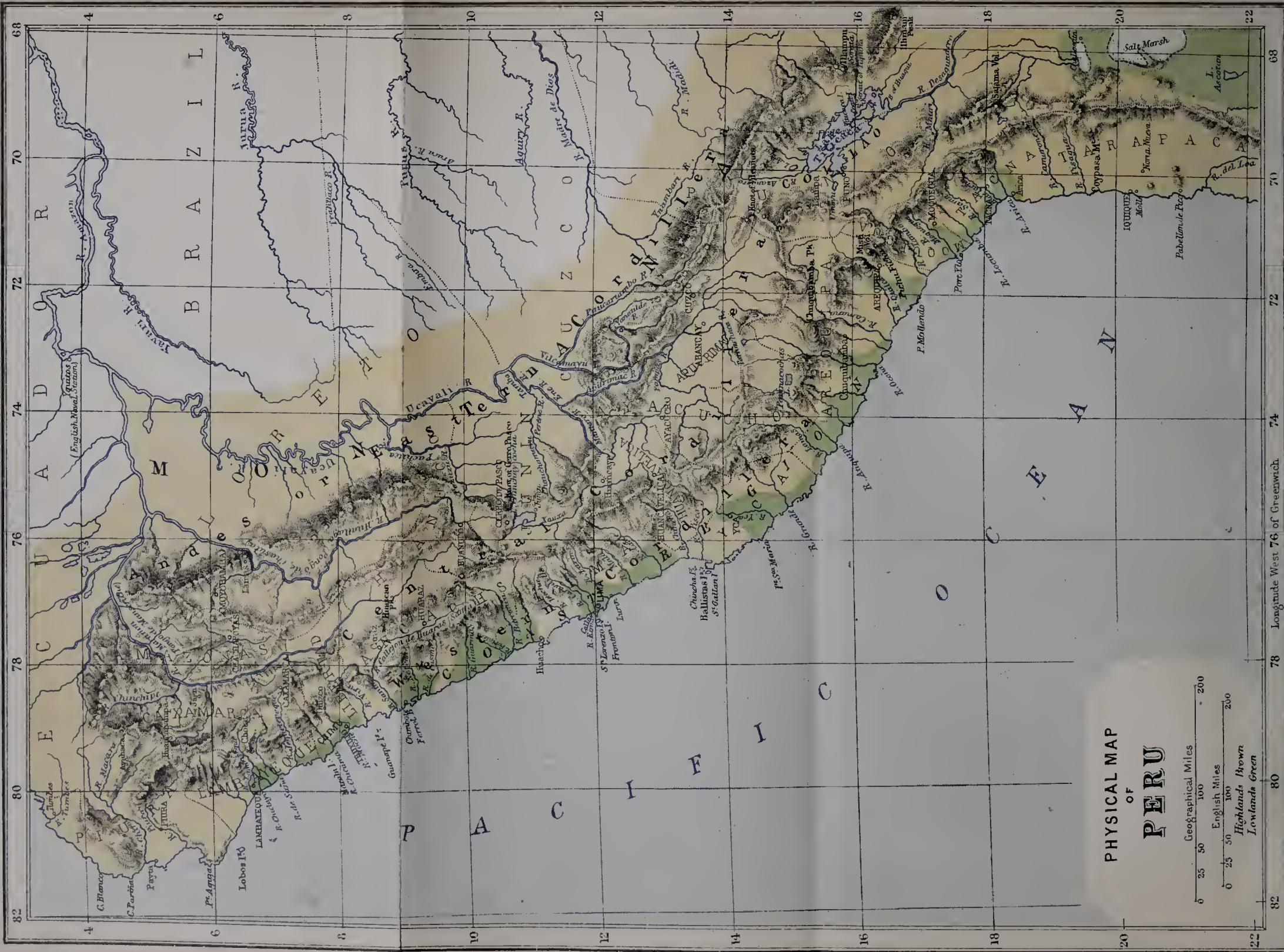
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PHYSICAL MAP
OF
PERU

Geographical Miles
0 25 50 100 200
English Miles
0 25 50 100 200
Highlands Brown
Lowlands Green

London: Sampson Low, Marston, Searle, & Rivington.

Edw. Waller

PERU.



CHAPTER I.

EXTENT AND BOUNDARIES—GENERAL DESCRIPTION.

PERU is situated between the equator and the tropic of capricorn, and entirely within the torrid zone, yet it includes regions with every variety of climate. Its length along the Pacific coast is 1400 miles, along the cordillera of the Andes 900, with a width of from 300 to 400 miles. The Republic is between the parallels of $3^{\circ} 35'$ S. and $22^{\circ} 10'$ S., and between 68° and $81^{\circ} 20' 45''$ of W. longitude. The area covers 504,000 square miles. Peru is bounded on the north by the Republic of Ecuador, on the west by the Pacific Ocean, on the east by Brazil and Bolivia, and on the south by Bolivia. The northern boundary, east of the Andes, follows the rivers Chinchipe and Marañon to Tabatinga.

the most western settlement of Brazil. West of the Andes the north boundary is the line of the Macara river to the Chira, and thence the line goes north to the Bay of Guayaquil, near Tumbez.¹ The eastern boundary follows the river Yavari from its mouth in the Marañon to its source; thence a straight line to the river Madeira at a point in $6^{\circ} 52' 15''$ S. lat., on the left bank. This point is half way between the mouths of the Mamoré and Madeira. Thence up the course of the Madeira to the mouth of the Mamoré. Here the boundaries of Brazil, Peru, and Bolivia meet. That between Peru and Bolivia southwards has never been defined accurately. It follows the Madidi, a tributary of the Beni, to the Andes, crosses Lake Titicaca to the mouth of the river Desaguadero, follows the river Mauri to its source in the maritime cordillera, and then runs south along the water-parting to the source of the river Loa. That river, to its mouth in the Pacific, forms the southern boundary.² The principle which regulates the limits of Peru, and of the other Spanish American States, is the *uti possidetis* of 1810 (that is the boundaries then fixed for her colonies by Spain), modified in some

¹ Practically this is the northern boundary, but Peru claims much more territory, north of the Marañon.

² Peru claims a boundary further south, in $22^{\circ} 33'$ S. Lat., along the ravine of Tucupilla.

instances, by subsequent treaties. The boundary between Peru and Brazil is settled by the treaty of October 23rd, 1851, followed by a Commission which explored the River Yavari in 1866 and 1871. The boundary to the north is still in dispute with Ecuador; and that dividing Peru and Bolivia is only fixed where it crosses the Andes to the Pacific, but not where it traverses the forests to the eastward.

Peru is divided longitudinally into three well-marked regions, which are so entirely different from each other, that it will be most convenient to consider them separately. The COAST, extending from the base of the maritime cordillera to the Pacific Ocean, consists of a sandy desert, crossed at intervals by rivers, along the banks of which there are fertile valleys. The SIERRA is the region of the Andes, and is about 250 miles in width. It contains stupendous chains of mountains, elevated plains and table-lands, warm and fertile ravines and valleys. The SIERRA is the native place of the potato, the abode of the alpaca and vicuña, while in its recesses lie concealed the inexhaustible mineral wealth of Peru. Skirting the eastern slopes of the Andes is the third region of tropical forests, within the basin of the Amazon, called the MONTAÑA, which extends to the eastern frontier.

The three belts into which Peru is thus longitudinally divided present totally different aspects from every point of view, the COAST being a zone of desert traversed, at intervals, by narrow, fertile valleys; the SIERRA a series of lofty mountain ranges; and the MONTAÑA a vast expanse of dense tropical forest, cut by great navigable rivers. It is proposed to commence a description of the physical aspects of Peru, with the Coast region.

CHAPTER II.

PHYSICAL GEOGRAPHY—GEOLOGY, CLIMATE, FLORA, FAUNA.

I.

The Coast.

THE strip of land between the Pacific and the Andes, averaging a width of twenty miles, but varying much, has been upraised from the ocean at no very remote period, and is still nearly as destitute of vegetation as the African Sahara. It is however, watered by rivers which cross the desert at intervals. Some have their origin in the summits of the Andes, and run with a permanent stream into the ocean. Others, rising in the outer range, which does not reach the snow-line and receives less moisture, carry a volume of water to the sea during the rainy season, but for the rest of the year are nearly dry.

The absence of rain on the coast of Peru is caused by the action of the lofty uplands of the

Andes on the trade-wind. The south-east trade blows obliquely across the Atlantic Ocean, until it reaches the coast of Brazil. By this time it is heavily laden with vapour, which it continues to bear along across the continent, depositing it and supplying the sources of the Amazon and La Plata. Finally the trade-wind arrives at the snow-capped Andes, and here the last particle of moisture is wrung from it, that the very low temperature can extract. Coming to the summit of that range, the trade rushes down as a cool and dry wind on the Pacific slopes beyond. Meeting with no evaporating surface, and with no temperature colder than that to which it is subjected on the mountain tops, the trade-wind reaches the ocean before it again becomes charged with fresh moisture. The last it has to spare is deposited as snow on the tops of the cordilleras, to feed mountain streams under the heat of the sun, and irrigate the coast valleys.

The constantly prevailing wind on the coast is from the south.

From November to April there is usually constant dryness on the coast, a clear sky, and considerable heat, though by no means oppressive. From June to September the sky is obscured for weeks together by fog (*niebla*), which is often accompanied by drizzling rain (*garua*), and the

cold at early dawn is often as penetrating as in spring in England, though the thermometer rarely falls below 60° Fahr.; and the wind never exceeds a gentle breeze all through the year. In 1877 the maximum temperature at Lima was $78\frac{1}{2}^{\circ}$ in February, and the minimum $61\frac{1}{2}^{\circ}$ in July. In 1876 the maximum was 78° , the minimum 59° . At the time when it is hottest and driest on the coast, it is raining heavily in the Andes, and the rivers are full. When the rivers are at their lowest, the *garua* prevails on the coast. The climate of various parts of the coast is, however, modified by local circumstances.

The deserts, between the river valleys, vary in extent, the largest being upwards of seventy miles across. On their western margin steep cliffs generally rise from the sea, above which is the *tablazo* or plateau, in some places slightly undulating, in others with ridges of considerable height rising out of it, the whole apparently quite bare of vegetation. Sections of the desert may be examined on the cliffs which border the intersecting valleys, and along the sea shore. These sections often show alternating horizontal layers of various composition, some of them apparently repeated at unequal depths. The uppermost stratum is in many parts a calcareous sandstone of minute fragments of

shells, which, especially in the north near Payta, furnishes material for filtering stones. Below there are alternating layers of pudding-stone and shell marl, the latter being one mass of crushed fossil molluscs welded together by a tenacious cement, intermixed with coralline. These strata are nearly horizontal, and several hundred feet thick ; and beneath them there is a bed of argillaceous shales, tilted at a considerable angle, and often of immense thickness.

The surface of the deserts is generally hard, but, in many places, there are great accumulations of drifting sea-sand. The sand usually forms isolated hillocks called *medanos*, of a half-moon shape, sometimes beautifully symmetrical, and having their convex sides towards the trade-wind. They are continually shifting, any stone or dead mule forming the nucleus. A strong wind raises an immense cloud of sand rising to a hundred feet and whirling in all directions. When at rest the *medanos* are from ten to twenty feet high with an acute crest, the inner side perpendicular, the outer with a steep slope. Scattered over the barren wilderness they form a most intricate labyrinth. Sometimes, especially at early dawn, there is a musical noise in the desert, like the sound of distant drums, which is caused by the eddying of

grains of sand in the heated atmosphere on the crests of the *medanos*.

Apparently the deserts are destitute of all vegetation. As far as the eye can reach there is a desolate waste; yet three kinds of herbs exist, which bury themselves deep in the earth, and survive through the long periods of drought. Some of the smaller *medanos* are capped with snowy white patches, like sand a little whiter than the rest. This whiteness is that of innumerable short spikes of an amarantaceous plant, whose stems ramify through the *medano*, and go on growing so as to maintain their heads above the sand. The two other herbs of the desert are known as the *yuca del cavallo* (a *Martynia Gesnercæ*), and *yuca del monte* (probably *Aniseia*), both with edible roots. Both these plants maintain a subterranean existence during many years, and only produce leafy stems in those rare seasons when sufficient moisture penetrates to the roots. In a few hollows, which are reached by moisture, the trees of the desert find support. These are the *algarrobo* (*Prosopis horrida*), the *vichaya* (*Capparis crotonoides*), the *sapote del perro* (*Colicodendrum scabridum*), and an *Apocynea*. The *Capparis* and *Apocynea* are mere shrubs in the desert, and the *Prosopis* a low tree of very scraggy growth. Far away towards the

first ascents of the Andes a tall branched *Cactus* is met with.

When the mists set in, the low hills near the coast bordering the deserts, which are called *Lomas*, undergo a change as if by a stroke of magic. A blooming vegetation of wild flowers, for a short time, covers the barren hills. Near Lima one of the lower ranges is then brightened by the beautiful yellow lily called *amancaes*; and the other flowers of the *Lomas* are various *compositæ*, wild tobacco, an *oxalis*, a *salvia*, a purple *solanum*, an *amaranth*, *cruciferæ*, and several grasses.

But this carpet of flowers is very partially distributed, and lasts but a short time. Generally the deserts present a desolate aspect, with no sign of a living creature or of vegetation. Only in the very loftiest regions of the air the majestic condor may be seen floating lazily, and perhaps a lizard will dart across the path.

When the traveller, who has been for many hours wearily riding across the *despoblado* or desert, at length reaches the verge of one of the river valleys, the scene suddenly changes. Standing on the cliff's edge, he sees at his feet a broad valley filled with perpetual verdure. The great mass of pale green foliage is usually composed of the *algarrobo* woods, while the course of the river is

marked by lines or groups of palms, by fine old willow-trees (*Salix Humboldtiana*), fruit gardens, and fields of cotton, maize, or *alfalfa* (*lucerne*). In some valleys there are vast expanses of sugar-cane; in others the vineyards and olive-yards predominate. The woods of *algarrobo* are used as pasture for cattle, horses, and goats; all the animals greedily enjoying the pendulous, flattish, yellow pods, which is a heating food and a strong aphrodisiac.

The coast region of Peru may be divided for purposes of description into six sections, commencing from the north. First, there is the Piura Region; next, the Lambayeque and Truxillo Region; thirdly, the Santa Valleys; fourth, the section from Lima to Nasca; fifth, the Arequipa and Tacna Section; and sixthly, Tarapaca.

The great desert region of Piura extends for nearly two hundred miles, from the Gulf of Guayaquil to the borders of the Morrope valley, and is traversed by three rivers—the Tumbes, Chira, and Sechura or Piura, all receiving their waters from the inner cordillera and breaking through the outer range. It is here that the coast of South America extends furthest to the westward until it reaches Capes Blanco and Pariña, and then turns southward to the Bay of Payta. Cape Pariña is

the most western point of the continent, being in longitude $81^{\circ} 20' 45''$ W. The river Chira falls into the Bay of Payta in $4^{\circ} 30'$ N. ; while the Piura reaches the sea at Sechura, to the south of Payta. The climate in the Piura Region is modified by the lower latitude, and also by the vicinity of the the forests of Guayaquil.

Fog and *garua* are much less frequent than in the coast region further south, while positive rain sometimes falls. At intervals of about ten years there are occasional heavy showers of rain from February to April. These rainy years are called *años de agua*, and are years of plenty for the farmers in the Chira and Piura valleys, which are famous for their cotton crops and fruit-trees. On the other hand these rains destroy the flat roofs of houses, and even wash away whole villages.

The second section of the Coast Region includes the valleys of the Morrope, the Chiclayo, the Saña, the Jequetepeque, the Chicama Chimu and Viru, with the intervening deserts, a length of two hundred miles. Here are many flourishing estates, and the cities of Lambayeque, Chiclayo and Saña in the north ; and of Truxillo in the Chimu valley, once a great centre of aboriginal native population.

In the third section, extending for two hundred miles, are the valleys of Santa, Nepeña, Casma,

Huarmay, Fortaleza, Pativilca, Supé, and Huaura, included partly in the province of Santa, partly in that of Chancay. The river Santa is remarkable for its long course between the outer and central ranges of the Andes, in a trough known as the Callejon de Huaylas, one hundred miles in length. It then breaks through in a deep gorge and reaches the sea after a course of thirty-five miles. The Santa and Nepeña valleys are separated by a desert of eight leagues in width, on the shores of which there is good anchorage in the Bay of Ferrol, where the port of Chimbote is the terminus of a projected railway. The Nepeña, Casma, Huarmay, and Fortaleza rivers rise on the slope of the outer range, and are therefore dry during part of the year; but wells are dug in their beds, and the fertility of the valleys is thus maintained. The river Supé also rises on the outer range, but the Pativilca (or Barranca) and Huaura break through it from their sources in the snowy cordillera, and have a perennial supply of water. There are nine leagues of desert between the Nepeña and Casma, sixteen leagues between the Casma and Huarmay, and eighteen leagues, much of it loose sand, between the Huarmay and Fortaleza. This desert is called the *Pampa de Mata-cavillos*, from the number of exhausted animals which die there. Between the

Supé and Pativilca is the desert called "*Pampa del Medio Mundo*."

The next coast section extends for over three hundred miles from Chancay to Nasca; and includes the rivers of Lacha or Chancay, Carabayllo, Rimac, Lurin, Mala, Cañete, Chinchá, Pisco, Yca, and Río Grande with its branches. Here the outer range approaches the ocean, leaving a narrower strip of coast, but the fertile valleys are closer and more numerous. Those of Carabayllo and Rimac are connected, and the view from the Bay of Callao extends over a vast expanse of fertile plain, bounded by the Andes, with the white towers of Lima in a setting of verdure. Lurin and Mala are smaller valleys; but the great valley of Cañete is one green sheet of sugar-cane, and narrow strips of desert only separate it from the fertile plain of Chinchá and the vineyards of Pisco. The valleys of Yca, Palpa, and Nasca, on branches of the Río Grande, do not extend to the sea, and between Nasca and Acari there is a desert sixty miles in width.

The fifth coast section, that of Arequipa and Tacna, extends over 350 miles, and comprises the river-valleys of Acari watered by the Lomas, of Arequipa, Atico, Ocoña, Camaná and Majes, Quilca, with the interior valley of Arequipa, Tambo, Moquegua,

Locumba, Tacna, and Arica. Here the maritime cordillera recedes, and the important valley of Arequipa, though on its western slope, is 7000 feet above the sea and ninety miles from the coast. Moquegua and Tacna are also inland valleys, though on the Pacific side of the cordilleras. Ridges of primitive rock intervene between the Arequipa valley and the coast, and the great desert is, like those further north, dotted with *medanos* of fine sand, and is 4000 to 5000 feet above the sea. All the rivers in this section, except that of Atico, have their sources in the more distant range, and the fertile coast valleys through which they flow, especially Majes and Moquegua, are famous for their vineyards. In the Tambo valley there are thousands of olive trees and several mills.

The sixth and most southern coast section is that of Tarapaca, extending between the cordillera and the Pacific, in a narrow desert strip from Arica to the river Loa, the southern boundary of the Republic. The physical features of Tarapaca differ somewhat from those of the rest of the Peruvian coast. There is an arid range of hills parallel with the sea-shore some thirty miles in width, and rising to from 3000 to 6000 feet, covered with sand and saline substances. Between this coast-range and the Andes is the great plain called the Pampa de

Tamarugal, from 3000 to 3500 feet above the sea, which is about thirty miles wide, and extends the whole length of Tarapaca. The Pampa is covered with sand, and contains sufficient nitrate of soda for the consumption of Europe for ages. Here and there a few *tamarugas* or acacia-trees are met with, which give their name to the region. The inhabited places are in ravines on the eastern margin of the Pampa, where water is found at the base of the mountains. The coast is waterless. The deposits of nitrate of soda are on the western side of the Pampa de Tamarugal, and in some of the hollows of the coast range.

The coast of Peru has few protected anchorages, and the headlands are generally abrupt and lofty. These, and the few islands, are frequented by myriads of sea-birds, whence come the guano deposits, a great source of Peruvian wealth, the retention of ammonia and other fertilizing properties being due to the absence of rain. Off the Sechura Desert, in the Payta Section, are the two islands of Lobos Afuera and Adentro. The Macabi Islets are off the port of Malabrigo. Guañape Island is thirty-two miles north of Santa. The isles of San Lorenzo and Fronton form the western side of Callao Bay. In the Bay of Pisco are the three Chincha Islands, from which nearly all the guano

has now been taken, the Ballista Islets and San Gallan. Other guano deposits have more recently been found on capes and headlands in Tarapaca. The sea-birds, to which the guano deposits are due, swarm in myriads along the coast. Among these are the *Sula variegata* or guano bird, the *Larus modestus*, a large gull, the *Pelecanus thagus*, and the *Sterna Ynca*, a beautiful tern with curved white feathers on each side of the head. There are also several cormorants (*Carbo* sp.), but the *piquero* (*Sula variegata*) is the principal guano bird. The immense flocks, as they fly along the coast appear like clouds, and incessantly one after another is seen to plunge into the sea to devour the fishes, which they find in extraordinary masses around the islands. The guano deposits are in layers from forty to fifty feet thick, of a greyish-brown colour outside, and more and more solid from the surface downwards, owing to the gradual deposit of strata and evaporation of fluid particles. The sea-lions (*Otaria Forsteri*) are very common on the rocky islands and promontories of the coast, and in the adjacent sea. There are great herds at the back of the island of San Lorenzo. This species was described by Forster, and used to be known as Forster's sea-lion. The large creatures frequent particular islands for the purpose of

breathing their last, the wounded or aged being helped there by companions. Hence, no doubt, the sea-lions helped in the formation of the guano deposits.

The whole Peruvian coast is subject to frequent and severe earthquakes, more especially the southern sections. The most terrible in its effects was that of 1746, which destroyed Callao. There had been subterranean noises for some days previously ; the first shock was at 10.30 p.m. on October 28th, and there were 220 shocks in the following twenty-four hours. Callao was overwhelmed by a vast wave which rose eighty feet, and the shocks continued until the following February. On August 13th, 1868, a fearful earthquake nearly destroyed Arequipa and levelled the cathedral, and great waves rolled in upon the ports of Arica and Iquique. An equally terrible visitation took place on May 9th, 1877, in the extreme south of Peru, when all the southern ports were overwhelmed. These fearful catastrophes are connected with volcanic action, for they are in greatest force in the neighbourhood of volcanoes, whether extinct or active. That of 1877 appears to have had its origin in the volcanic mountains near the frontier of Peru and Bolivia, and to have spent its chief fury near its centre of origin, gradually working itself out as it went

north. Usually the line of disturbance is meridional and along the coast, but in some instances the line takes a seaward direction at an angle with the mountain chains. Since 1570 there have been seventy violently destructive earthquakes recorded on the west coast of South America, but the record is of course very incomplete in its earlier part.

II.

The Sierra.

THE Peruvian Andes contain peaks of great height, but none have yet been accurately measured. Aconcagua appears to be the loftiest peak in the Andes. Fitz Roy and Kellett give its height at 23,000 feet, but M. Pissis has reduced it to 22,210. Chimborazo, according to Humboldt, is 21,424 feet above the sea ; but the later measurements of Reiss and Von Theilmann give 20,697 and 20,703 feet respectively. According to Pentland, the Bolivian peak of Illimani has a height of 21,149 feet ; Minchin gives 21,040 feet ; and Wiener, who ascended it in May, 1877, gives 20,112 feet by aneroid. Illampu (Sorata) is 21,286 feet according to Pentland, and 21,470 according to Minchin. Pentland gives the height of the Misti volcano

above Arequipa at 20,320 feet, but a later measurement gives 17,934 feet. Other peaks further south are said to be much higher, but there are no reliable measurements.

The Peruvian Andes is a mountain system, with a total width of about 250 miles, parallel, more or less, with the line of the coast, N.W. to S.E. It consists of three chains or cordilleras. Two of these, running parallel and near each other on the western side, are of identical origin, and have been separated by the action of water during many centuries. On these chains are the volcanoes, and many thermal springs. But the great eastern cordillera of the Andes, rising from the basin of the Amazon, is of distinct origin. The three cordilleras may be defined as the western or maritime, the central, and the eastern cordilleras. The narrow belt between the western and central chains is for the most part, but not always, a cold and lofty region known as the *puna*. The Sierra is the tract between the central and eastern chains, consisting of lofty mountainous spurs, wide plains, valleys, and deep ravines and gorges. The width of the Sierra varies from fifty to one hundred miles.

The eastern cordillera is a magnificent and continuous range, in great part of silurian formation, with talcose and clay slates, many quartz veins, and

eruptions of granitic rocks. Mr. Forbes says that the Illimani and Illampu Peaks in Bolivia are silurian, and fossiliferous to their summits. The eastern cordillera is of moderate elevation in northern Peru, continuing to increase in height and magnificence as it approaches the culminating peaks near the Bolivian frontier. It is cut through by six rivers in Peru, namely the Marañon, the Huallaga ; and the Mantaro, Apurimac, Vilcamayu, and Paucartampu—the four last being tributaries of the Ucayali.

The central cordillera is not cut through by any river, although several sources of coast streams are to the eastward of the line of highest peaks. It forms an unbroken water-parting. The chain consists mainly of crystalline and volcanic rocks, on each side of which are strata of aqueous, in great part of jurassic rocks, thrown up almost vertically. The western or maritime chain is of the same formation, merely separated by erosion. The lower ridges, on the coast, are of granite or syenite.

For purposes of description the SIERRA may be conveniently divided into four sections, each embracing portions of all three ranges. The first, from the north, comprises the valleys of the Marañon and the Huallaga, and is 350 miles long by 100 broad. The second extends from Cerro Pasco to Ayacucho, about 200 miles, including the

lake of Chinchay-cocha, and the valley of the Xauxa. The third extends thence to the knot of Vilcañota, 250 miles, and is the Cuzco Section, with the valleys of the Apurimac, the Vilcamayu and the Paucartampu. The fourth is the basin of Lake Titicaca, about 150 miles in length and breadth.

The valleys of the Andes in the first Section are almost classic ground to the student of geography, for they are described by Humboldt, the greatest of modern travellers. He visited the silver-mines of Hualcayoc, and the plateau of Caxamarca, explored the valley of Jaen, and crossed the maritime cordillera to Truxillo. The portions of the western and central cordilleras, which bound the Callejon de Huaylas, have since been minutely described by Raimondi. Here the central chain attains a height of 20,000 feet, and the passes are 15,000 feet above the sea. The river Santa rises in the alpine lake of Conococha, at a height of 10,000 feet, and flows northwards for a hundred miles along the remarkable fissure between the central and western cordilleras. At Huaylas, near the point where the river forces its way down a gorge in the western chain, into the coast plain, the height is 9000 feet, a fall of about ten feet in a mile. The west side of the valley is arid and barren, no rivers flowing down from the lower maritime chain, while numerous

fertilizing streams fall into the river on its right bank, from the snowy central cordillera. The remarkable fissure between the two chains is the most interesting geographical feature in this section of the Sierra. The river Marañon rises in the lake of Lauricocha, on the inner slope of the central cordillera, and, after a course of 350 miles within the Andes, it forces its way through a gorge of the eastern chain, at the famous Pongo de Manseriche, and enters the Amazonian plain. Having its remotest source within a few miles of the Lauricocha lake, the Huallaga flows northwards, parallel with and to the eastward of the Marañon for 300 miles, and finds a way through the eastern cordillera at a gorge called the "Salto de Aguirre" (the leap of the traitor Aguirre), or the "Pongo de Chasuta." The Indians allege that formerly an enormous eagle inhabited the summit of the precipice overhanging the rapid, which exacted a toll of one man from each canoe that passed down, to devour in its eyrie, a statement which the indelible blood-stains are supposed to prove; for there are still red blotches far up on the face of the cliff. At length one Aguirre undertook to combat the eagle. He dressed up a sack of rice to resemble a man, and placed it in the prow of the canoe, while he, with the "Niña Inez," occupied the stern. On coming opposite the *huaman-luasi*

(eagle's house), the mighty bird pounced down upon the "*proero-hechizo*" (deception in the bows), and was instantly pierced and slain by the ready arrow of Aguirre. So say the Indians of Chasuta, whose tradition, floating for three centuries down the stream of time, has transformed Ursua into an eagle, and his murder by Aguirre into a noble action !

The second section of the Sierra commences where the mountain knot of Cerro Pasco connects the central with the eastern cordillera. Here the Andean system is narrower than at any other point in Peru, the whole width not exceeding a hundred miles. Cerro Pasco, the centre of the great silver-mining district, is in $10^{\circ} 48'$ S. latitude, and 13,673 feet above the sea. From this saddle the cordilleras continue southwards, and between the central and eastern chains, at the foot of the ascent to Cerro Pasco, is the lake of Chinchay-cocha, thirty-six miles long by seven, and 13,000 feet above the sea, the largest in South America except Titicaca. Its marshy banks are overgrown with reeds, and inhabited by numerous water-fowl. The natives believe that huge fish-like animals haunt the lake, and at a certain hour of the night leave their watery abode and prowl about the pasture-lands, committing great havoc among the cattle. From this

lake a river flows southwards through a populous valley, which within the Sierra is known as the river of Xauxa, for a distance of 150 miles. Then, breaking through the eastern cordillera, it enters the Amazonian basin as the Mantaro river. In this section the western and central chains are not so clearly defined. Their spurs form a confused mass of mountains and ravines in Caxatambo, Canta, Huarochiri, and Yauyos, where the coast rivers of the Rimac section take their rise. Further south are the quicksilver-mines of Huanca-velica, and the silver of Castro Vireyna. A slight ridge marks the eastern water-parting, and Tarma is on the outer slope, where the Chancha-mayu river has its rise, eventually falling into the Perene.

The Cuzco section of the Sierra is the centre and heart of Peru, and here nature has worked on her most stupendous scale. The region presents every variety of climate and scenery. Tropical vegetation in the deep gorges, the climate and products of Italy and Spain in the warm valleys, the crops of Northern Europe in the more elevated plains and ravines, higher up the pasture-lands of the Alps; then bleak wilds with a sub-Arctic climate, crowned by rocky heights and peaks covered with everlasting snow. The glaciers do not fill the

valleys, but form in masses on the elevated peaks with a steep slope, often perpendicular, and invariably a small lake at the base ; but old moraines and boulders show the more extensive action of ancient glaciers.

On the Cuzco section the Andean system increases in width to 200 miles, and the chains take a more easterly direction. Here the coast range is lofty and bold, and there is a greater and more defined interval between it and the central cordillera, the space being occupied by Lucanas and Parinacochas with its alpine lake—the lake of the flamingoes. The true Sierra, the region between the central cordillera and the eastern Andes, is here the cradle of the Ynca race, the Cuzco or navel of the aboriginal empire. The section commences at the Condor-kunka ridge, which connects two ranges, and forms the water-parting between the basins of the Mantaro and the Apurimac. It ends at the great knot of Vilcañota, which again connects the ranges, separating the basin of the Apurimac from that of Lake Titicaca. The intervening country, watered by the Apurimac and its tributaries, is 200 miles in length. On the northern watershed of the central chain rises the Apurimac and many of its feeders from Aymaraes, Cota-bambas, and Chumbivilicas, which cut deep into the

land, forming profound ravines. The Apurimac receives the river Pachachaca on its left bank, with other streams flowing through the most magnificent mountain scenery in the world. Next it is joined by the river Pampas, in another tropical ravine called Puma-cancha, an important tributary which receives all the drainage of the southern watershed of the Condor-Kunka ridge, and of part of the eastern slope of the central cordillera. After receiving the Pampas, the Apurimac forces a way through the eastern Andes, and joining the Mantaro, the united flood is called the Ene. Mingling their waters, the Ene and Perene become the Tambo, far away in the Montaña.

The River Vilcamayu rises on the Vilcañota range, and flows down a lovely and fertile valley, parallel with the Apurimac, by Yucay and Urubamba, the old palaces and baths of the Yncas, until it also forces a way through the eastern Andes, having received the Yanatilde, a smaller river rising in the lonely little village of Laris, high up on the eastern mountains. Between the Apurimac and the Vilcamayu is the plateau, surrounded by hills, on which stands the famous city of Cuzco, 11,380 feet above the sea, in latitude $13^{\circ} 31' S$. Its drainage flows off to the Vilcamayu. Still further east, in the very heart of the eastern range,

is the valley of the River Paucartampu, whose source is in the corner where the knot of Vilcañota joins the eastern Andes. The Paucartampu also forces a way through the mountain barrier, and the united rivers of Paucartampu, Vilcamayu, Apurimac, Mantaro, and Perene form the mighty Ucayali.

The fourth section of the Peruvian Sierra is formed by the inland basin of Titicaca, the largest lake in South America. Here the scenery is neither so varied nor so beautiful as in the region of Cuzco, because the land is at a more uniform elevation, and so high that the vegetation is scanty. The lake itself, the lowest part of the basin, is 12,545 feet above the level of the sea. The whole area of the Titicaca basin covers about 16,000 square miles, but the southern half is in Bolivia. It is bounded by the knot of Vilcañota and the lofty highlands of Canas on the north, on the west by the central cordilleras, and on the east by the Andes where that glorious chain culminates in the peaks of Illimani and Illampu (or Sorata) both certainly over 20,000 feet above the level of the sea. The Peruvian portion of the basin, including part of the lake, is about 150 miles long, and 100 wide. It is called the Collao. The elevation is too great for maize to ripen. It is a country of pastures .

and potato-fields, of quinoa and oca, while silver and copper abound in its mountains. The only trees are the *queñuar* (*Buddleia Incana*), with its dark leaf and rough bark, and the *molle* (*Schinus molle*) in some favoured spots.

Lake Titicaca itself is about eighty miles long by forty broad, and is divided into two parts by the peninsula of Copacabana. The southern division, called the Lake of Huaqui, is twenty-four miles long by twenty-one broad, and is united to the greater lake by the narrow strait of Tiquina. A number of rivers, which are swollen and of considerable volume during the rainy season, fall into the lake. The largest is the Ramiz, formed by the junction of the two streams of Pucara and Azangaro, both rising in the knot of Vilcañota. The Ramiz enters at the north-west corner. The Suchiz, formed by the rivers of Cavanilla and Lampa, also falls into the lake on its north-west side, as well as the Yllpa and Ylave. On the eastern side are the rivers Huarina, Escoma, and Achacache, draining this part of the western slopes of the Andes. Much of the water thus flowing in is taken off by the great river Desaguadero (i.e. *drain*), which flows out of the south-west corner; and, after a course of 150 miles, disappears in the salt lake of Paria or Aullagas in Bolivia. But a greater proportion is taken up by

evaporation, the volume of water which flows into the lake during the rainy season being drunk up again when the tutelar deity of the lake returns, between April and September. The waters are steadily receding, under the combined influence of evaporation and of the sediment brought down by the rivers. The deepest part of the lake is on the eastern or Bolivian side, in others it is so shoal that there is only just room to force the *balsas* or reed canoes through the rushes. In the day the winds blow from the eastward all the year round, sometimes raising a heavy sea; but at night they are occasionally westerly. Along the western shore there are many acres of tall rushes, and the east winds blow all the dead rushes to the west side, mixing with the living beds, and forming a dense, tangled mass. The lake abounds in fish of very peculiar forms, and in aquatic birds, including troops of stately flamingoes. The principal islands of the lake are those of Titicaca and Coati near the peninsula of Copacabana; Campanario in the east, nine miles from the shore; Soto and Esteves. North of Lake Titicaca there is a smaller lake called Arapa.

In this Titicaca section of the Sierra the central and western cordilleras attain a great elevation, and the space between them is a lofty and cheerless

puna, surrounded by rocky snow-clad heights. The passes over the central cordillera, on the roads to Arequipa, are 17,740 feet and 15,590 feet above the sea. On the western range, overhanging the city of Arequipa, is the volcano of Misti, 17,934¹ feet, the peak of Charcani, 18,558 feet, and the grand peak of Chuquibamba further north. The pass from Arequipa over the western cordillera, by the Alto de los Huesos, has a height of 13,400 feet.² The Peruvian territory continues along the water-parting of the western cordillera to the River Loa, in the province of Tarapaca, including the peaks of Lirima and Chuncura of immense but, as yet, unmeasured height. The peaks of Pallahuari and Sajama, in about the latitude of Tacna, are said to be over 22,000 feet above the sea, but this is uncertain.

The great variety of elevation within the Sierra produces vegetation belonging to every zone. There is a tropical flora in the deep gorges, higher up a sub-tropical, then a temperate, then a sub-arctic, and finally an arctic flora. In ascending from the coast-valleys, the traveller will first have to traverse an arid range, where he will see the great branched cacti rearing themselves up among the rocks. Further inland, where the rains are

¹ 20,320, according to Pentland.

² Rivero.

more plentiful, is the native country of the potato the very best being grown at Huamantango in the western cordillera, near the sources of the coast river Carabayllo. Here also are other plants with edible roots, under cultivation, the *oca* (*Oxalis tuberosa*), the *ulluco* (*Ullucus tuberosus*), and the *massua* (*Tropæolum tuberosum*). In the ravines appear a pretty shrub with a yellow flower, called *chilca* (*Tecoma rosæfolia*), another with beautiful red and orange flowers (*Mutisia acuminata*), salvias, and calceolarias. The American aloe or *maguey* (*Agave Americana*) is also common in the Sierra, and the fibre and poles are used in building and roofing huts. Round Guamanga, and in the ravines near Cuzco, are the *huacatay* (*Tagetes minuta*) and many other composite plants, besides numerous species of *Cantua*. This is also the country of apples and pears and peaches, while close to, in the deeper valleys, the grapes ripen, and there are delicious chirimoyas, alligator pears, lucmas, granadillas, and *paccays*. The chirimoya, which is also grown in the coast valleys, is the best of the *Anonas*, the size of a small melon, green and soft outside, with smooth scales, creamy white inside with black pips. The *paccay* is a large pod with sweet cottony pulp, a species of *Inga*. The commonest road-side tree, in the temperate part of

the Sierra, is the *Schinus molle*, with its graceful branches and bunches of red berries. At higher elevations the trees are the *lambras* or *aliso* (*Alnus acuminata*), the *sauco* (*Sambucus Peruviana*), the *Queñuar* (*Buddlea Incana*), and the *Polylepis racemosa*. The *Buddlea* flourishes up to 12,000 feet on the shores of Lake Titicaca. But the sub-tropical valleys of the Sierra are most famous for the splendid crops of maize. The Cuzco maize is the largest and best in the world, grown in the lovely vale of Vilcamayu.

In the loftier regions of the Andes the pasture consists of tufts of a coarse grass (*Stipa ychu*) of which the llamas eat the upper blades, while the sheep browse on the tender shoots beneath. There are also two kinds of shrubby plants, a thorny composita called *ccanlli*, and another called *tola* or *ccapu*, which is a resinous *Baccharis*, and is used for fuel. The heights round the Titicaca basin are cultivated with patches of barley, used green for fodder, of potatoes, and *quinua* (*Chenopodium quinoa*). The grain from the quinua is used for food, in soups and puddings, and the leaf is also eaten. Barley is cultivated from 7000 to 13,200 feet above the sea.

The animals which specially belong to the Peruvian *Sierra* are the domestic llamas and

alpacas, and the wild vicuñas. The llama stands about four feet six to eight inches, and the colours of the flocks vary much, generally brown with shades of yellow and black, frequently speckled, and more rarely white or black. The males are trained to carry burdens, while the females are kept in pastures. They will carry about one hundred pounds, but when a llama finds the load too heavy, it lies down, and no power on earth will move it until a part is taken off. The daily journeys do not exceed three or four leagues, because the animals will not feed during the night, and they must be allowed to graze during the march. When resting, the llamas make a humming noise which sounds like a number of *Æolian* harps. A flock of laden llamas journeying over the mountains is a strange and beautiful sight. They proceed at a slow and measured pace, with their long necks erect, and gazing eagerly on every side; and their Indian masters treat them with affectionate kindness. The wool is used for making coarse cloth. The alpaca is smaller, standing only about three feet three inches, and to the shoulders two and a half feet. The fleece is beautifully soft and very long, either white or black, and the animals are tended with great care, being kept in large flocks. The largest animal of the llama kind is the huanacu,

which however is more common in Chile and Patagonia. The vicuña is generally met with on the lofty ridges and table-lands of the Peruvian Sierra in a wild state, and it is by far the most beautiful and graceful of the genus. The neck is longer and more slender, and its short curly wool is finer and more silky. The head, back of the neck, and back are of a peculiar reddish-yellow hue, the inner parts of the limbs a bright ochre, and the breast and belly are white. Vicuñas live in flocks of six to fifteen females and one male which keeps guard at a little distance, while the others are grazing. They frequent the grassy expanses and patches at great heights, and are often to be seen with their backs covered with snow.

The other animals in the loftier parts of the Sierra are the *taruco* or deer (*Cervus Antisensis*), the *viscacha* (*Lagidium Peravianum*), a large rodent often to be seen peering round on its hind legs, and the *chinchilla*. A species of fox called *atoc* (*Canis Azaræ*) is found all over the cordilleras, and the puma (*Felis concolor*) and *ucumari* or bear (*Ursus ornatus*), when driven by hunger, venture into the loftier regions. The *ucumari* is a large black bear, with a white muzzle, usually found in the woods on the eastern slopes. The largest bird is the *condor*, and there is

another bird of the vulture tribe, with a black and white wing feather formerly used by the Yncas in their head-dress, called the *coraquenque* or *alcomari*. The *pito* is a brown-speckled woodpecker, with a yellow belly, which flutters about the rocks; and a partridge, called *yutu*, frequents the rushy grass. There is a little bird the size of a starling, with brown back striped with black, and white breast, called by the Indians *Ynca-hualpa* (cock of the Ynca), which utters a monotonous sound at the close of every hour during the night. On the lakes there is a very handsome goose with white body and dark green wings shading into violet, called *huachua*; the *licli*, a plover with similar plumage, two kinds of ibis, a large gull (*Larus serranus*) which frequents the lagoons in flocks, and an immense water-hen. Many pretty little finches, such as *tuya* and *choclla-poccochi*, fly about the maize-fields, and a green paroquet is often met with as high as 12,000 feet above the sea.

III.

The Montaña.

THE third division of Peru is the region of the tropical forests within the Amazonian basin, traversed by great navigable rivers, including the wooded slopes of the eastern watershed of the

Andes. The Marañon having burst through the Pongo de Manseriche, and the Huallaga through the Pongo de Chasuta, enter the forests, and join after separate courses of about 600 and 400 miles, the united flood then flowing eastward to the Brazilian frontier. After 150 miles it is joined by the Ucayali, a great navigable river, with a course of 600 miles, formed by the union of the Perene, Mantaro, Apurimac, Vilcamayu, and Paucartampu; and afterwards increased by the Pachitea, flowing from the eastern Andes, near Cerro Pasco, and formed by the Pozuzu, Mayru, Palcazu, Picchu, and other affluents. From the junction of the Ucayali the Marañon continues to flow westward, until it receives the Yavari, on the eastern frontier of Peru. The country between the Huallaga and the Ucayali, traversed by the continuation of the eastern cordillera, is called the Pampa del Sacramento. The forests drained by the Marañon, Huallaga, and Ucayali, form the northern portion of the Peruvian Montaña.

The southern half of the Montaña is watered by the streams flowing down from the eastern cordillera, in the Sierra sections of Cuzco and Titicaca. Those belonging to Cuzco are called the Paucartampu and Marcapata valleys, and their streams go to form a great river called the Madre de Dios, an

important tributary of the Bolivian river Beni, which falls into the Madeira. The streams from the Titicaca section of the Andes water the beautiful forests of Caravaya, which extend to the Bolivian frontier, and also belong to the Beni river system.

The whole length of the Peruvian Montañas from the Marañon to the Bolivian frontier is 800 miles. The region is naturally divided into two sections, the sub-tropical forests in the ravines and on the slopes of the eastern Andes, which in places descend abruptly to the plains, but generally stretch out in prolonged spurs; and the tropical forests in the Amazonian plains.

The sub-tropical section is important from the value of its products, and interesting from the grandeur and extreme beauty of its scenery. Long spurs run off from the Andes, gradually decreasing in elevation, and it is sometimes a distance of sixty or eighty miles before they finally subside into the vast forest-covered plains of the Amazon basin. Numerous rivers flow through the valleys between these spurs. In commencing the descent from the snowy plains the polished surfaces of perpendicular cliffs are seen to glisten here and there with cascades, some like thin lines of thread, others broader and breaking over rocks, others

seeming to burst out of the fleecy clouds, while jagged black peaks streaked with snow pierce the mist which conceals their bases. Lower down the ravines are bounded by masses of dark frowning mountains, ending in fantastically-shaped peaks, and the vegetation rapidly increases in luxuriance. Here are masses of ferns of many kinds, begonias, lupins, calceolarias, while torrents stream down the mountain sides in every direction, often in a white sheet for hundreds of feet, finally seeming to plunge into beds of ferns and flowers. Next begin the larger shrubs, the bright purple *Lasiandra* and other *Melastomaceæ*, the orange *Cassia*, tree ferns, and palms. Here is the native place of the quinine-yielding *Chinchona*-tree, with its racemes of deliciously sweet flowers, and leaves with crimson veins. The most valuable kinds are found north of Peru, in the forests of Ecuador, namely the *C. succirubra*, yielding red bark, and the precious *C. officinalis* of Loxa ; while the *C. Calisaya* is more abundant in Bolivia. In Peru the several species ✓ yielding grey bark grow in the basins of the Huallaga and Marañon, while the *C. Calisaya* and many kindred varieties are natives of Carabaya. It is in these warm valleys that large plantations of coffee and cacao flourish, and thence comes the coca (*Erythroxylon coca*) which is chewed by every

Peruvian Indian. Coca is cultivated between 5000 and 6000 feet above the sea, in the warm valleys of the eastern Andean slopes, where frost is unknown, and it rains every month in the year. It is a shrub from four to six feet high, with straight alternate branches, leaves alternate and entire, the size of tea leaves, and small yellowish-white flowers. Sowing is begun in January, when the rains commence, in a nursery. Next year the young plants are placed in specially prepared soil, often in terraces, and at the end of eighteen months they yield the first harvest, continuing to bear for upwards of forty years. The leaves are picked and spread out in the drying yard, and when thoroughly dry are sewn up in sacks of 20 lbs. each, pressed tightly down, or in *tambores* or drums. The yield is about 80 lbs. an acre, and the annual produce of coca in Peru is 15,000,000 lbs. No Indian is without his *chuspa* or coca bag, the property of the leaves being to prevent the occurrence of difficulty of breathing at great elevations, to enable a greater amount of fatigue to be borne with less nourishment, and to give solace on the road. The products of these warm valleys are chinchona bark, coca, coffee, and cacao, sugar, and tropical fruits of all kinds.

In the vast untrodden forests on the plains

there are trees of many kinds; the incense-tree, india-rubber-trees of the *Hevea* genus, numerous varieties of beautiful palms, sarsaparilla, and an infinite number of timber-trees and other plants. But the clearings for cultivation are few and widely separated. The traffic is almost entirely by canoes on the navigable rivers, and in recent years by steamers.

In the Peruvian Montañas troops of monkeys skip from tree to tree; among them the silver-grey monkeys, three feet high, the largest in South America. Swarms of bats also flutter in all directions at sunset, one kind with an expanse of wing of two feet. The leaf-nosed bat rubs up the skin of sleeping men or beasts, and sucks the blood. The black bear (*Ursus frugilegus*) infests the plantations, and lively coatis traverse the forests in flocks. Among the feline class the dark-grey *yaguarandi*, the size of a wild cat, pursues all kinds of birds, while the *oscollo*, the *uturuncu*, and a long-tailed tiger-cat lie in wait for weaker mammalia. The puma roams through the higher regions of the forests, where he has an almost undisputed hunting-ground. But the most terrible animal of prey is the savage jaguar or ounce. Squirrels and mice swarm in the forests, and the heavy tapir reposes in soft marshy grounds, and in the damp shady

recesses during the day, roaming over the open glades and tearing the tender twigs from the bushes at night. Flocks of peccaries traverse the level Montaña, and deer are common on the edges of *pajonales* or grassy expanses. The owl and the goat-milker, among birds of prey, are abroad at night, and in the hilly parts the black ox-bird fills the air with a noise like the distant roaring of a bull. The *tunqui* (*Rupicola Peruviana*) is a beautiful bird, the size of a cock, with bright red body and black wings, the head surmounted by a tuft of red feathers. Flycatchers and shrikes are common, and the finches are distinguished by their dazzling colours. The *organista* (a *Troglodytes*) in modest plumage of cinnamon brown, raises her enchanting song in the most woody parts of the Montaña. The potter bird, with red tail, builds a dwelling of loam or clay, while the pouched starlings hang their nests, often four or five feet long, on the slender branches of the trees. No combination of gorgeous colours can exceed what is presented by the humming birds; and long trains of green parrots fill the air with their noisy chattering. There is a richly-plumaged pigeon, and several doves, and game birds are represented by the large black curassow, *Alectors* and *Penelopes*. Spoonbills of rose-coloured plumage, ibis, snipe, cranes,

plovers frequent the marshes and lagoons. In the rivers are found the great fresh-water tortoise, which buries its eggs on the sandy banks, alligators, and the manatee or dugong. Snakes and vipers abound among the dense underwood, some very venomous ; others harmless, which wind on tendrilled-climbing plants, or lie, like necklaces of coral, on the decaying leaves. Frogs raise their far-sounding voices through the night, and insects are innumerable. In these leafy wildernesses, extending for hundreds of miles, vegetable and animal life teem in myriad forms, and many able naturalists have devoted their lives to the study and description of the numerous forms. Yet the knowledge of them is not complete, and there are still great stores of nature's secrets concealed in the depths of the Peruvian Montaña.

CHAPTER III.

THE PEOPLE AND THEIR LANGUAGES.

THE present population of Peru is derived from several sources, and it is necessary, for a proper comprehension of the subject, to trace out the original roots from whence the different races have sprung, which are now combined to form the Peruvian nation.

The bulk of the population is composed of the aboriginal Indians, the natives who had been there from time immemorial when America was discovered. The central tribe of these Indians was that of the Yncas, inhabiting the region in the Sierra, which has already been described as the Cuzco section. Such a country was well adapted for the cradle of an imperial tribe. Humboldt has well observed, that "when enterprising races inhabit a land, where the form of the ground presents to them difficulties on a grand scale, which they may conquer and overcome, the contest with

nature becomes a means of increasing their strength and power, as well as their courage." The Ynca race was originally divided into six tribes, whose lands are indicated by the rivers which formed their limits. Of these tribes the Yncas themselves had their original seat between the rivers Apurimac and Paucartampu, with the lovely valley of the Vilcamayu bisecting it. The Canas dwelt in the upper part of that valley up to the Vilcañota Pass, and on the mountains on either side. The Quichuas were in the valleys round the head waters of the Apurimac and Abancay. The Chancas extended from the neighbourhood of Ayacucho (Guamanga) to the Apurimac. The Huancas occupied the valley of the Xauxa up to the saddle of the Cerro Pasco, and the Rucanas were in the mountainous region between the central and western cordilleras. These six tribes eventually formed the conquering Ynca race. Their language was introduced into every conquered province, and was carefully taught to the people, so that the Spaniards correctly called it the "Lengua General" of Peru. This language was called Quichua, after the tribe inhabiting the upper part of the valleys of the Pachachaca and Apurimac. Their territory consisted chiefly of uplands covered with long grass, and the name has been derived from the abundance of straw in this

region. *Quehnani* is to twist; *Qnehnasca* is the participle; and *Ychu* is straw. Together *Qnehnasca-Ychu*, or twisted straw, abbreviated into Quichua. The name was given to the language by Friar San Tomas in his grammar published in 1560, who perhaps first collected words among the Quichuas and so gave it their name, which was adopted by all subsequent grammarians. But the proper name would have been the Ynca language.

The aboriginal people in the basin of lake Titicaca were called Collas, and they spoke a language which is closely allied to the Quichua. These people, living at 12,000 feet above the sea, were without corn, without timber; they dwelt in stone huts, tended their flocks of llamas, raised crops of potatoes and quinoa, and were engaged in incessant feuds. The Collas were conquered by the Yncas in very remote times, and their language, now incorrectly called Aymara, received many Quichua additions; for it originally contained few words to express abstract ideas, and none for many things which are indispensable in the first beginnings of civilized life. One branch of the Collas (now called Aymaras) was a savage tribe inhabiting the shores and islands of Lake Titicaca, called Urus. They lived among the beds of rushes, making secret lanes through them, navi-

gating in floats made of long bundles of rushes lashed together, and dwelling in rude stone huts on the islands. They had a peculiar language called Puquina.

The Ynca and Colla (Aymara) tribes eventually combined to form the great armies which spread the rule of Ynca sovereigns over a much larger extent of country. The two tribes resemble each other in essential points. The men average a height of five feet four inches, and are strongly built, the Aymaras being generally more thick-set than the Yncas and Quichuas. The nose is invariably aquiline, the mouth rather large, the eyes small and black or deep brown, bright, and generally deep set, with long, fine lashes. The hair, of a deep black brown, is very abundant and long, in men as well as women, and fine. The men wear it in long plaited pig-tails, and have no beards. The skin is very smooth and soft, and of a light coppery brown colour, sufficiently light to show a blush of health or of shame on the cheeks. The neck is thick, and the shoulders broad, with great depth of chest. The legs are well formed, and the feet very small, the heel being very slightly prominent. The women, when young, have graceful figures, and are often pretty, with their hair in two long plaits, called *simpa*. Nearly all are subjected to toil and

exposure ; but the portraits of Ynca princesses at Cuzco, contemporary with the conquest, portray faces of great beauty. The Aymaras are remarkable for great length of body, as compared with the thigh and leg ; and they are the only people whose thighs are shorter than their legs. Both Ynca and Aymara Indians are admirable pedestrians, and are possessed of extraordinary endurance. The expression of the Indian of Peru is generally sad, and he is a lover of solitude ; though this was probably not the case before the Spanish conquest.

In the happy days of the Yncas they cultivated many of the arts, and had some practical knowledge of astronomy. They had domesticated all the animals in their country capable of domestication, understood mining and the working of metals, excelled as masons, weavers, dyers, and potters, and were good farmers. They brought the science of administration to a high pitch of perfection, and composed imaginative songs and dramas of considerable merit. As soldiers, their skill and prowess enabled them to conquer and consolidate a vast empire, and no other race with whom they came in contact could long withstand their arms. The Quichua language possesses great facility of expression, a complicated grammar, and though containing a copious abundance of compound words,

it is capable of being expressed with energy and conciseness. Its cases and tenses are formed, not by flexion, but by the addition of particles to the root as mechanical affixes. Another peculiarity is the incorporation both of the accusative and nominative pronoun into the verb itself, which is called a verbal transition by the Jesuit grammarians. There are two forms of the plural, exclusive, and inclusive. The system of numeration is very complete, and there is a great variety of words for expressing relationships. Though possessing no alphabet or means of writing, the system of counting and reckoning by strings and knots, called *quipus*, enabled the Yncas to preserve statistical reports, and to administer the complicated affairs of a great empire.

Three centuries of oppression have made the Ynca Indian a sadder and less enterprising being, and have deteriorated his character ; but he is still industrious and honest, and retains many of the virtues of his ancestors. The pure Indians are now employed in the charge of their flocks of llamas and alpacas, in the cultivation of quinua, potatoes, and ocas in the higher regions, of maize in the Sierra valleys, and of coca plantations in the Montaña. The men wear a blue or green coat, red waistcoat, and black woollen breeches, with bare legs and

sandals of llama hide. Their head-gear consists of a broad-brimmed velvet *montera*, or cap, trimmed with red and blue ribband; the *chuspa*, or bag of coca, is slung over one shoulder; and a long *tauna*, or walking-stick, is used on journeys. The women wear a cotton shift, or *ucuncha*; a skirt of bright crimson or blue cloth; a *lliclla*, or mantle, of the same material, but different colour, often trimmed with gold lace, and secured by a large silver *topu* or pin, in the shape of a spoon. The hair is plaited in two long tails, and surmounted by a *montera*, like that worn by the men. A broad ornamental belt, called *chumpi*, is worn round the waist. But the head-dresses of the women vary in the different provinces. In Ayacucho it is like that of a Roman peasant. Among the Aymaras the women, instead of a *lliclla*, wear an *unca*, or mantle, brought together over each shoulder, and secured by *topus* on either side. Their head-dress is a four-cornered red cap, the sides curving outwards and stiff, with black flaps suspended from the top. On the road these women are never idle, they toil along with a great bundle, called *ccepi*, on their backs, often with a baby, and are always employed spinning cotton or wool into thread on a spindle. Their houses are of unhewn stone, with interstices filled in by mud, roofed with beams of

the *lambras* (Aliso) or aloe, and thatched with *ychu*. Their food varies with the elevation above the sea. In the temperate valleys it consists of maize cakes, eggs and potatoes, or yucas boiled together with beans and red pepper pods. Higher up they live upon quinoa, and various edible roots; and they are all too fond of the *chicha*, or liquor fermented from maize.

The people of the Titicaca basin, 12,000 feet above the sea, prepare their potatoes to convert them into *chuñus*. After being dug out of the ground, the potatoes are steeped in water, and then spread out on a thin layer of *ychu*, or straw. In this way they are exposed to the frost for several nights, until they are quite frozen through. They are then again steeped in water, and trampled out with men's feet, to remove all soluble matter; after which they are spread out in the air until perfectly dried, when they are ready for use as *chuñus*. The process reduces the size of the potato to that of a musket-ball. They can be preserved for any length of time if kept dry, are much used on journeys into the Montaña, as well as at home, and are most valuable articles of food. The *oca* is also frozen in the same way and preserved. Another important article of food is the *quinoa*, the seeds of which, after being well washed, are boiled and

make excellent porridge, while the leaves are eaten as salad. The *quinua* is also preserved by boiling the grains, drying them in the sun, grinding and making them into little hard lumps. In this form it is called *quispiña*. But the main dish of both Quichua and Aymara Indians is the *chupé*, consisting of a soup made with potatoes and any flesh or fowl that may be procurable, together with vegetable ingredients, and invariably some red pepper pods.

It is not possible now to obtain an approximate estimate of the population of the Peruvian Sierra before the Spanish conquest. We are told by contemporary writers that it was very dense, and their statement is confirmed by the fact that, in many now uninhabited parts, there are the remains of cultivation, in terraces rising up the sides of mountains, sometimes thirty and forty, one behind the other, now abandoned and overgrown with grass. Still the Ynca Indians, in reduced numbers, form the bulk of the population of the Sierra.

The coast of Peru was inhabited by a people entirely different from the Indians of the Sierra. There are some slight indications of the aborigines having been a diminutive race of fishermen who were driven out by the more civilized people, called

Yuncas. The aborigines may be represented by a gentle, hospitable tribe of fishers in Tarapaca, called Changos, never exceeding five feet in height, with flat noses, fishing in boats of inflated seal-skins, and sleeping pell-mell in seal-skin huts on heaps of seaweed. Vocabularies have recently been collected of a language once spoken further south in the desert of Atacama, which is now nearly extinct. There are also remnants of aboriginal people at Eten, Morrópe, Catacáos, Sechura, and Colan, in the north of Peru, with peculiar dialects.

The people who possessed the richest coast valleys, at the time of the Ynca conquest, were an extremely interesting race. They appear to have formed distinct communities in the different valleys, each under a chief more or less independent, and wars were frequent and very bloody. The most civilized and powerful was the Chimu, who ruled over the valleys of Pativilca, Huarmay, Santa, Guañape, and Chimu. His palaces now form most extensive ruins, and his people set apart every square foot of ground that could be reached by water, for cultivation, building their towns on the edge of the deserts. Their system of irrigation was as perfect as any that modern science has since adopted. They not only supplied the

fields by regular turns, but raised the water to irrigate high levels. In the valley of Nasca rich vineyards and cotton estates now owe their existence to a most remarkable system of irrigation constructed by the ancient people. The Yuncas had also made considerable advances in the arts; silver and gold ornaments, mantles embroidered with gold and silver bezants, robes and head-dresses of feathers, cotton cloths of fine texture, and vases of an infinite variety of design being found in the tombs. But the Yncas conquered the coast valleys about a century before the discovery of America, and the Spaniards completed the destruction of the Yunca people. There is a grammar of the language of the *Chimu*, with a short list of words, and the Lord's prayer in *Mochica*, a dialect spoken in the Cañete valley. These are sufficient to show that the coast language was entirely different from Quichua and Aymara. The Chimu has three declensions for nouns, the Quichua only one. Chimu has no transitive verbs, different forms of plural, and the conjugations are quite on a distinct principle. The people must have been of different origin from the Yncas, and there are reasons for thinking that they came by sea.

With the Spanish conquest, the Yunca Indians,

the subjects of the Chimu, disappeared. They may have a few descendants in secluded villages in the lower slopes of the western cordillera. The village of Chilca, south of Lima, is also exclusively inhabited by Indians. Their place was supplied by negroes, to work on the estates in the coast valleys. In 1793 these valleys contained 40,300 negro slaves, while there were a like number of freed mulattoes in Lima, Truxillo, and other towns.

The wild Indians of the Montañas were never conquered by the Spaniards, but they were visited by devoted Franciscan missionaries during the seventeenth and eighteenth centuries, and some were collected in mission villages. The noblest of these Amazon Indians was the tribe of *Jeveros*, in the forests round the Pongo de Manseriche, on the head waters of the Marañon. Faithful, brave, and generous, they withstood all assaults of the Spaniards. They have light muscular bodies, small animated black eyes, aquiline noses, and thin lips, and many are very fair, owing to the capture of Spanish women in 1599. They love liberty and can tolerate no yoke; but they have fixed homes, cultivate maize and yucas, and live in well-built huts. They are excellent porters, and many now work in the farms of Moyobamba. On the river Huallaga there were once a dozen

separate tribes. The *Cocomas* built their huts round the shores of a beautiful lake near the lower Huallaga, but have since moved down the Marañon to Nauta, at the mouth of the Ucayali. They are shrewd, provident, and excellent canoe-men, speaking a dialect of the Tupi language. They have a custom of eating their deceased relatives, and grinding their bones to drink in fermented liquor. "For," urge the *Cocomas*, "is it not better to be inside a friend than to be swallowed up by the black earth?" The *Cholones* have long been settled in mission villages on the Huallaga, but retain their hunting habits; being very expert in the use of the *cerbatana* (*pucuna*) or blow-gun. It is a long straight piece of chonta palm, hollowed out, with an arrow a foot long, and they kill birds at forty paces. The *Panos* are another tribe of the Huallaga which has since moved down the Marañon; and the *Motilones* (or *Lamistas*) remain as industrious labourers, preparing cotton at Chasuta.

On the Ucayali there are many tribes, some partly civilized, others working as traders on the river, and a few leading a savage life in the forests. The wild tribes are the *Cashibos*, *Capahuana*s, *Remos*, *Amajuacas*, and *Mayorunas*. No one dare venture among the *Cashibos*, who occupy the

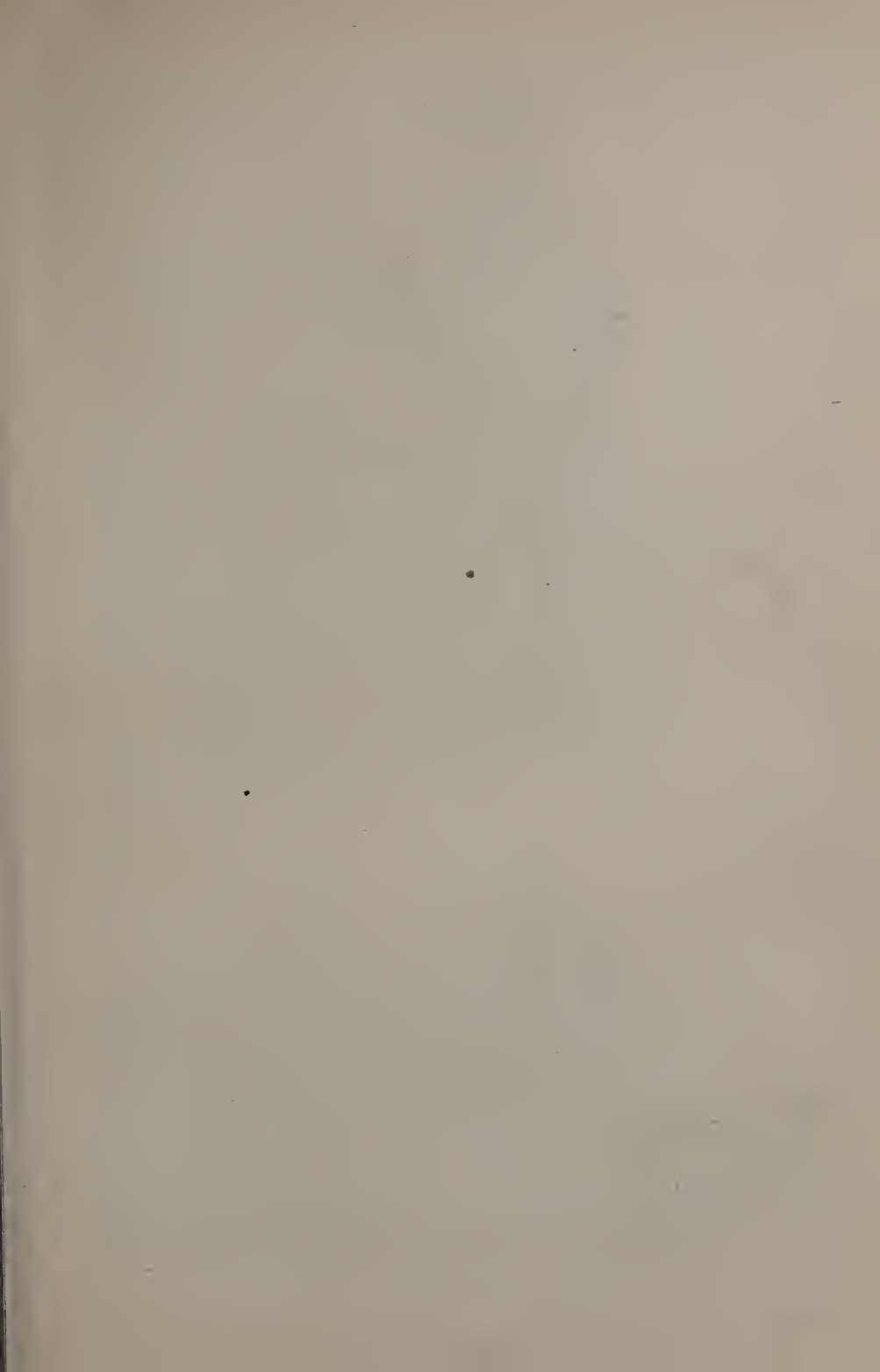
forests near the river Pachitea and attack all strangers ; but both Girbal and Raimondi doubt the stories of their cannibalism. The *Capahuana*s are a bold and savage race on the right bank of the Ucayali, always at war with their neighbours, and the *Amajuacas* are higher up the river, with like habits. The *Remos* are numerous and courageous, seldom coming near the river ; while the *Mayorunas*, between the Ucayali and Yavari, are the most ferocious of all the tribes. They have thick beards and white skins, and are believed to be descended from Spanish soldiers. They are tall and very warlike, going quite naked, armed with clubs, spears, and blow-guns.

The other Ucayali tribes are peaceful traders. The *Conibos* or *Manoas* are Christians, round the station of Sarayacu, on the lower part of the river. They trade in salt fish and sarsaparilla, and are good boatmen ; speaking the Pana language. The *Pirros* or *Chuntaquirus*, higher up the Ucayali, are also much employed by the traders as boatmen, and navigate the whole extent of the river. They are intelligent, handsome, and brave ; and wear long cotton frocks. The *Sencis* are a bold, warlike, and generous tribe to the north-east of Sarayacu, who are friendly though not converted. They are very industrious cultivators, all idlers being killed

as useless. The *Setebos* are a set of quiet and tractable traders, north of the Cashibos, and the *Shipibos* are their neighbours. All these tribes speak the Pana language, a dialect of the general Tupi of the Amazon valley.

The *Antis* or *Campas* form a large tribe on the upper course of the Ucayali, with probably a large share of Ynca blood in their veins. They wear cotton robes, live in very large huts, many families together, as is the custom with most of these tribes, and are armed with clubs and bows and arrows. The wild Indians of the Montañas of Paucartampu and Caravaya are called *Chunchos*. They keep in the forest-covered plains, generally far away from settlements, and are still very savage. But they live in large well-built huts, and cultivate maize and plantains. It is difficult to obtain any accurate idea of the population of the Peruvian Montañas, as many tribes wander in the forests without any intercourse with traders, but the attempt has been made.

After the conquest of Peru in the middle of the sixteenth century, there was an influx of Spaniards. Great numbers settled in the towns, and others spread over the country as priests, officials, planters, and overseers of mines and workshops. This immigration soon gave rise to a class of half-castes





CHOLO INDIANS.

called Mestizos, in all grades of society. For the best Spanish blood was proud to ally itself with that of the Yncas. One of the house of Borgia married an Ynca princess, and the most popular historian of Peru was a Mestizo whose mother was an Indian of the blood royal, and whose father was a Garcilasso de la Vega. There were Mestizos who, for culture and talent, were the equals of any Spaniard; but the Mestizos were in all ranks of life. At the same time the unscientific administration of the Spanish Viceroys led to a rapid diminution of the population. The Ynca and Aymara Indians of the Sierra were decimated, while the Yuncas of the coast disappeared altogether. After these agencies had been at work for two centuries and a half, a careful census was taken in 1793, under the superintendence of the learned Dr. Unanue, with the following results :—

Indians	.	.	.	.	617,700
Mestizos	.	.	.	.	241,225
Spaniards	.	.	.	.	136,311
Negro slaves	.	.	.	.	40,337
Free Mulattos	.	.	.	.	41,404
					1,076,977
Religious persons	.	.	.	.	5496

Of these religious persons 2018 were secular priests, 2217 monks, 1044 nuns, and 217 *beatas*. This enumeration, however, does not include the basin of Lake Titicaca, which had been placed under the Viceroy of Buenos Ayres in 1778, nor is any account taken of the wild Indians of the Montaña. It tells a sad story of depopulation since the fall of the Yncas, and the extinction of their just and able government.

The next important change in the character of the population was caused by the return of many Spaniards to Europe after the war of independence, which was however balanced by the arrival of settlers from Spain and other countries. There has been another more recent influx. In 1855 a decree was promulgated declaring that slavery had ceased to exist in Peru. The negro slaves became free and ceased to work, and it was necessary to invite free labour into the country to cultivate the sugar and cotton estates and vineyards on the coast. In November, 1849, Chinese labourers began to arrive. Between 1849 and 1853 the number of Chinese coolies that landed in Peru was 2561. In 1856 the immigration was prohibited by a law of Congress, but it was again authorized in 1861, the coolies being contracted for during a service of eight years at the rate of 75*l.* per man, and

they received about 13s. a month for supplies, besides 1½ lbs. a day of sweet potatoes, rice, yuca, and maize. At the end of eight years the coolie is free to dispose of his labour as he pleases. The number of Chinese immigrants that landed from 1860 to 1872 was 58,646.¹ In 1858 a German colony was established on the river Pozuzu, in the Montaña, at an elevation of 5000 feet above the sea, which in 1872 numbered 457 souls. A small French colony is also established in the valley of Chanchamayu, east of Tarma, engaged in the cultivation of coffee.

Thus the population of Peru now consists of Ynca Indians, Aymara Indians, Mestizos, creoles or natives of pure Spanish descent, European settlers, Negroes, Chinese, wild Indians of the Montaña, and a numerous body of half-castes. The half-castes are distinguished as follows:—

<i>Mestizo</i>	.	.	Child of a white father and Indian mother.
<i>Mulatto</i>	.	.	„ „ Negress.
<i>Chino</i>	.	.	„ Indian father and Negress.
<i>Cuarteron</i>	.	.	„ white father and Mulatta.
<i>Quinteron</i>	.	.	„ „ Cuarterona.
<i>Zambo Negro</i>	.	„	Negro father and Mulatta.
<i>Mulatto Oscuro</i>	.	„	„ Mestiza.
<i>Zambo Chino</i>	.	„	„ China.

¹ According to Consul Hutchinson. 43,000 altogether according to Consul General St. John.

<i>Chino Oscuro</i>	.	Child of an Indian father and Mulatta.
<i>Mestizo Claro</i>	.	„ „ Mestiza.
<i>Chino Cholo</i>	.	„ „ China.
<i>Zambo Claro</i>	.	„ „ Zamba.
<i>Zambo</i>	.	„ a Mulatto father and Zamba.

The official language, which is spoken in all towns and throughout the coast, is Spanish. The language of the Sierra is Quichua, except in part of the Titicaca basin, where Aymara is spoken. In the Montaña the settled Indians generally speak Quichua, and the wild tribes on the Ucayali use Pana for the most part, or some dialect of Tupi.

In 1836 the population of Peru was officially estimated at 1,373,736, and in 1850 at 1,887,840. In 1862 it was 2,487,916. The main results of the latest census of Peru were made known in 1876. The total population was stated to amount to 2,704,998 souls. When this result is compared with that of 1793 it must be remembered that the portion of the basin of Titicaca included in the department of Puno was excluded from the earlier census, and is now included, namely 261,288 souls. The department of Loreto, in the Montaña, (63,794 souls) is also an addition. Out of 2,673,075 souls, there were 1,342,055 men, and 1,331,020 women. The men predominated in the coast districts, where foreign labour is employed, and in the Montaña.

Women were more numerous throughout the Sierra. The part of the census of 1876 relating to the proportion of races has not yet been published, but it is believed that the Indians form 57 per cent. of the population ; the Mestizos 23 per cent ; and the people of pure Spanish descent, negroes, Chinese, and foreigners 20 per cent. Peru is therefore still the country of the Ynca people.

CHAPTER IV.

ARCHITECTURAL MONUMENTS OF PERU.

THE architectural remains of former civilization in Peru are witnesses of the condition of the people in past centuries, and constitute unerring monumental records, which should be carefully studied. They are guides, enabling the inquirer to compare the past history of the country with the lot of its present inhabitants. The study of this ancient Peruvian civilization is especially important, because it was self-developed. It is exclusively of native growth.

The ruins, scattered over Peru, differ in style, and thus give evidence of having been erected at different epochs. But, at the same time, the same styles are met with as a rule in the most distant parts of the country. Hence they must be attributed to distant periods, not to the handiwork of different races. The earliest ruins certainly date from very remote ages. Five distinct styles may be traced, each representing a long lapse of time.

The first style consists of walls of unhewn stones and mud, on terraces or platforms; and the surviving works of this most remote period were probably *pucarás*, or defensive forts. There is a good example of this style at Curampa, between Andahuaylas and Abancay. The next style, in point of time, is represented by the cyclopean ruins. They must have been raised after the imperial race had conquered a vast extent of country, and thus commanded an unlimited supply of labour, but before it had developed that enlightened economy and skilful avoidance of waste of power which distinguished the later Yncas.

The cyclopean style in Peru is characterized by enormous blocks of stone, unwrought, except where they fit into their neighbours with marvellous precision, by great slabs and stone beams, by a tendency to carve rough figures on the slabs and lintels, by colossal but very rude statues, and by seats and stairs accurately cut out of huge monoliths, or even out of the living rock. Such works appear to have been undertaken by one powerful sovereign, or by two or three in succession, and then to have been left unfinished. They seem to have been erected either with religious or military objects; one main inducement having perhaps been to give employment to a tur-

bulent but subjugated people, while feeding the vanity, or pleasing the taste of the conqueror. There are six of these cyclopean ruins, which occur at intervals, from the extreme south to the north of the country; from the southern shore of Lake Titicaca to Huaraz, beyond the ridge of Cerro Pasco. These are Tiahuanacu, the ruin in the Calle del Triunfo at Cuzco, the great fortress at Cuzco, Ollantay-tampu, Huiñaque, and Huaraz.

Tiahuanacu is in Bolivia, just beyond the limits of the modern Republic of Peru, on a bleak and arid plain, near the southern shores of the lake, and over 12,000 feet above the sea. The ruins consist of rows of erect stones, portions of stairs, blocks with cornices and mouldings, and huge monolithic doorways. The main portion is a rectangular mound of earth, covering nearly a square mile, formerly terraced, each platform supported by a massive wall of cut stones, and surmounted by buildings of stone, the foundations of which may be traced. To the north of the mound there is a rectangular structure, defined by rows of erect stones 130 yards by 150. The stones are eight to ten feet high, and there appears once to have been a wall built between them, supporting a *terre-plein* of earth about eight feet above the level of the ground. In front of this masonry-faced

platform, and about twenty yards from it, there are traces of another rectangular structure, composed of blocks of trachyte, admirably cut, with remains of a corridor round it. Mr. Squier, who recently examined the ruins with great care, says that "in no part of the world has he seen stones cut with such mathematical precision and admirable skill as in Peru, and in no part of Peru are there any to surpass those which are scattered over the plain of Tiahuanacu." The most remarkable monument is the great monolithic doorway, thirteen feet five inches long, seven feet two inches above ground, and four feet six in thickness. Through its centre is cut the doorway, four feet six inches high by two feet nine. Above the opening there are three rows of sculpture in relief, and a central figure. On the reverse side there are cornices and niches. The stone is dark, and a very hard trachyte. The figures represent men holding sceptres; the upper and lower rows with crowned human heads; the middle row with heads of condors. The head of the great central figure is surrounded by rays each ending in a circle; and in each hand it grasps a sceptre, terminating in heads of condors. An ornamental girdle surrounds the waist, from which depends a double fringe. The figures in the three rows are all kneeling on one knee, towards the

great central figure. There were formerly colossal statues, and cylindrical columns among the ruins, which have been removed or destroyed.

These marvellous ruins point to the former existence of a large population, and to the guiding hand of some powerful sovereign ; but their history is entirely lost in remote antiquity.

Similar cyclopean remains at Cuzco, and further north, are wanting in the elaborate sculpture of Tiahuanacu. The wall in the Calle del Triunfo, in Cuzco, of compact syenite, is a specimen of roughly hewn masonry, each stone fitted with extreme nicety, yet weighing several tons. One stone has twelve angles, each fitting into, or being fitted into a neighbour, as closely as mosaic. But the great feature of the imperial city of Cuzco is the fortress on the lofty Sacsahuaman hill, which rises behind it. The defences consist of three lines of massive walls, each supporting a terrace and parapet, with entering and projecting angles for the whole length of 600 yards. The height of the walls is twenty-seven, eighteen, and fourteen feet respectively, with platforms between ; the total height being sixty feet. The stones are huge blocks of blue limestone, of irregular size and shape ; one of them twenty-seven feet high by fourteen ; and stones fifteen feet high by twelve are common

throughout the work. They are cut with rare precision, and accurately joined. Other walls and towers completed the fortress ; but only their foundations now remain. The Sacsahuaman fortress is undoubtedly the grandest specimen of the cyclopean style in the New World.

At Ollantay-tampu, in the valley of the Vilcama-yu, the great mass of ruins is of various styles. There are cyclopean remains, consisting of six slabs of immense size, stone beams fifteen and twenty feet long, and stairs and recesses hewn out of the solid rock. Here, as at Tiahuanacu, there were men and animals carved on the stones, but they have been destroyed.¹ The same style of architecture is met with, though only in vestiges, at Huiñaque, and in Huaraz, still further north.

The third Peruvian style, much later than the cyclopean work, shows a great advance in civilization. More enlightened rulers saw the waste of power involved in dragging and raising stones weighing many tons. The same pattern was retained ; walls were still built of polygonal-shaped stones with rough exterior surfaces, and fitting exactly to each other ; but they were much reduced in size, and could easily be conveyed and raised to their places. Rows of doorways and recesses occur

¹ *Cieza de Leon*, cap. 94.

in the walls, with stone lintels, and sides slanting inwards. The front of the palace on the Colcampata, overlooking the city of Cuzco, and just under the fortress, which is supposed to have been the abode of Manco Ccapac, the first Ynca, is in this style. So also are the palaces at Yucay and Chinchero, and the terrace-supporting walls at Ollantay-tampu and Rimac-tampu, all in the immediate neighbourhood of Cuzco.

The fourth style is characterized by more regular courses, but the stones are not all parallelograms, in some cases the upper and under stones dovetailing into each other. These walls usually have a cornice below the highest course. Finally, we have later edifices with perfectly horizontal courses, and stones exquisitely fitted, but with slightly projecting surfaces, analagous to our rustication. In this most perfect style we meet with rectangular doorways, windows, and wall recesses. Serpents are sometimes carved in relief on the walls.

The eastern side of the Temple of the Sun at Cuzco, where however the stones are quite smooth, the interior buildings on the Colcampata, the whole of the palaces in the Yncarial city, the edifices on the islands in Lake Titicaca, and the buildings figured and described by the Ulloas and

Humboldt, in the Quito region, are in this later style.

In Cuzco the stone used is a dark trachyte, and the coarse grain secured greater adhesion between the blocks. The workmanship is unsurpassed, and the world has nothing to show in the way of stone-cutting and fitting to equal the skill and accuracy displayed in the Ynca structures of Cuzco. No cement is used, and the larger stones are in the lowest row, each ascending course being narrower, which presents a most pleasing effect. The edifices were built round a court, upon which the rooms opened, and some of the great halls were 200 paces long by 60 wide, the height being thirty-five to forty feet, besides the spring of the roof. The roofs were of thatch; and we are able to form an idea of their construction from one which is still preserved, after a lapse of three centuries. This is on a circular building, called the *Sondor-huasi*, at Azangaro, and it shows that even thatch in the hands of tasteful builders will make a sightly roof for imposing edifices, and that the interior ornament of such a roof may be exceedingly beautiful. The Temple of the Sun was entirely plated with pure gold, and many of the golden plates, beaten as thin as paper, are still preserved in private houses at Cuzco. The end on

which the Sun's image was fixed is apsidal in shape, and the curving wall is one of the best specimens of Ynca masonry. But Cuzco still abounds in these beautiful walls, the remains of palaces and temples. They are generally plain, but occasionally with serpents carved in relief on the stones; and there is reason to believe that sculptures, now destroyed, once adorned the Ynca palaces. Two stone figures of some animal, said to have been in the gardens of the Sun, are still preserved.

Ollantay-tampu and Pissac, in the lovely valley of the Vilcamayu, contain a vast amount of interesting ruins of various periods, built on terraces overhanging dizzy precipices, and commanding glorious views of the fertile valley, with its terrace cultivation, and the chafing torrent dashing down its centre. The most perfect specimen of the later style at Ollantay-tampu is the niched corridor, faced by glorious precipices, with rows of green *andeneria* or terraces rising between them. The chief use of Ollantay-tampu was as a fortress, commanding the gorge leading northward into the Montaña. Another such stronghold was higher up the Vilcamayu valley at Pissac, commanding the pass leading to Paucar-tampu. At Pissac the fortress, in an almost impregnable position, is made

stronger by art, the rocks being faced with masonry, and crowned by circular towers with loop-holes. Everywhere the beautiful terraces extend to the edge of the precipices, ascended by flights of steps, with narrow conduits, down which the water was led for irrigation. Thus a large population was supported among these almost inaccessible heights.

In most of the Ynca palaces and temples there was an *Ynti-huatana*,² or sun circle for astronomical observations, but the only one that is properly preserved is at Pissac. The circle at Pissac is formed out of a rock, the top of which has been chiselled away and levelled, and a masonry wall is built round it, about twenty feet high. A flight of steps leads to a doorway on the wall, opening on the platform into which the rock has been hewn. This area is about eighteen feet in diameter, and from its centre rises a cone from the solid rock sixteen inches high, sharply cut and perfectly symmetrical, which was originally surrounded by a flat bronze ring. This was the gnomon. There is another less-perfect *Ynti-huatana* at Ollantay-tampu; another near the foot of the Colcampata terrace at Cuzco;

² *Ynti*, the Sun in Quichna, *Huatana*, a halter, from *Huatani*, I seize, "the place where the Sun is tied up or encircled," as with a halter. Hence *huata* means a year.

and others in the great temple of the Sun, and in the sacred island of Titicaca. With the aid of these *Ynti-huatanas* the Peruvians ascertained the periods of the solstices, and regulated their calendar. The cone in the centre was called, according to Acosta, *succanca*—a misprint, as Mr. Squier has suggested, for *rucana*, a finger—the *Ynti-rucana*, or sun-finger.

One of the most curious architectural remains near Cuzco is that of the temple of Huiracocha at Cacha, up the Vilcamayu valley, on the road south towards Lake Titicaca. It is interesting from the strange descriptions given of it by ancient writers, who say that it was on a plan different from any other temple in Peru. The ruins consist of a wall of *adobes* or clay, forty feet high and 330 long, built on stone foundations eight feet in height. This wall consists of twelve piers $19\frac{1}{2}$ feet wide, separated by spaces which formed doorways; the roof was supported on twenty-five columns, and the width of the temple was eighty-seven feet. Numerous buildings around it, in groups, were probably used by pilgrims to the shrine.

But the most venerated localities in Ynca tradition are the two islands of Titicaca and Coati, near the southern end of the great lake. On the former there are terraced platforms reached by

flights of steps, with two buildings on the upper one, said to have been provided for pilgrims before being conducted to the more sacred island of Coati. There are other ruins on Titicaca Island, including those of a palace, and a bath or tank. The latter is half-way down a long range of terraces supported by cut stone masonry, and the pool, forty feet long by ten, and five deep, has these walls on three sides. Four jets of water trickle into the bath, coming by subterranean passages from sources now unknown. Below the bath the water is made to irrigate terrace after terrace, until it falls into the lake. The palace is also beautifully situated amidst the cultivated terraces, and is of two stories, with the usual niches and doorways in the numerous rooms. In front there is an esplanade, twenty-two feet long and ten broad, with a magnificent view over the lake, bounded by the snowy peak of Illampu.

The island of Coati is about six miles from that of Titicaca, and contains two groups of ruins. The chief building is on the upper series of seven terraces, all once filled with rich soil, where throve the dark-leaved *queñuar* trees, and thickets of the scarlet *cantut*, or flower of the Ynca. The building is round three sides of a square, 183 feet long by 80, and is of stone laid in clay and stuccoed.

It includes thirty-five chambers, only one of which is faced with hewn stones. The ornament on the façade consists of elaborate niches, which agreeably break the monotony of the wall, and above them runs a projecting cornice. The walls were painted yellow and the niches red ; and there was a high-pitched roof, broken here and there by gables. The two largest chambers are twenty feet long by twelve, and loftier than the rest, each with a great niche in the wall facing the entrance. These were probably the holy places or shrines of the temple. The beautiful series of terraces falls off from the esplanade of the temple, to the shores of the lake.

At Hatun-colla, to the north-west of the lake, there are two sandstone pillars of the Ynca period, seven feet high by two broad, which are carved with figures of serpents, lizards, and frogs, and also with elaborate geometric ornaments. They formed the jambs of a palace now destroyed. There are other Ynca ruins throughout the Sierra of less note, northwards to Huanuco-el-viejo in the province of Huamalies,³ where the ancient buildings are well deserving of attention. Part of the Huanuco works is of accurately-cut limestone masonry, the rest of rough stone. There is a reservoir and bath, and a vista of doorways, each with a stone lintel thirteen

³ Fifty miles from the present city of Huanuco.

feet long. The perspective through these portals affords one of the finest architectural effects in Peru. Near this edifice is a fortress 180 long by 80, with a finely cut stone wall thirteen feet high. An inclined plane leads up to the platform above, which is entered by two portals with animals sculptured at the top. The Huanuco ruins are 12,156 feet above the sea.

In the basin of Lake Titicaca the original inhabitants, called Collas, built monumental towers for the burial of their dead, which are peculiar, and continued to be erected, though in improved forms, throughout the period of Ynca domination. These *chulpas*, or burial towers, consist of a circle or square of stones, with other stones placed horizontally upon them, lapping over each other so as to lean together and form a rudely-arched chamber. They are faced with hewn limestone blocks, forming towers about twenty-four feet high with cornices, the interior chamber being about ten to eleven feet by thirteen in height. The *chulpas* occur in groups of from twenty to a hundred, usually occupying a rocky ridge, or some isolated eminence in the plains. The most perfect specimens of these monuments are on a promontory called Sillustani, which juts out into the alpine lake of Umayu, near the road from Arequipa to Puno. Some stand on

the very verge of the precipices overlooking the lake. The largest is sixteen feet in diameter at the base, and thirty-nine feet high ; widening slightly as it rises, until, at the spring of the dome, its diameter is thirty-four inches greater than at its base. Here a cornice runs round, three feet wide, and projecting about three inches. The material is a hard, compact basalt, the stones admirably cut, and disposed in horizontal courses. The entrance is a man-hole cut in one of the stones, and leads into the chamber of the dead, a circular vault twelve feet high, arched with overlapping stones. The most remarkable fact connected with these buildings is that the stones were not shaped after having been put in position, but prepared and cut on a regular plan in which every dimension of the structure had been previously fixed. All the exterior stones are cut on radii from the centre of the building, and the gradual swell as the tower widens out, is preserved in each stone with geometrical accuracy. The *chulpas* in different parts of the Collao, vary in shape and internal arrangement, though preserving the same general plan. At Acora they are square ; at Escoma, on the eastern shore of Lake Titicaca, they contain two chambers one above the other ; and there are other forms of *chulpas* at Quellenata on the north-east

shore of the lake, and at Ullulloma in the valley of the river Pucara. These sepulchral monuments are peculiar to the hardy shepherd tribes of the Collao (now called Aymaras); while the vast ruins of Tiahuanacu are remains of a præ-historic imperial race, and the beautiful terraced edifices on the islands in the lake belong to the later Yncas.

The people of the coast, entirely differing from the Yncas in race and religion, also had buildings and other public works peculiar to themselves, and suited to a different climate. The centre of coast civilization was near the city of Truxillo, on the plain of Chimu, which is thickly covered over with the ruins of a great city, among which there are vast *huacas* or artificial hills. The city was supplied with water by *azequias*, which also formed streams to irrigate the gardens, all being led from the main channel derived from the river Moche. The great mounds were for sepulchral purposes. The largest, at Moche, is 800 feet long by 470, covering an area of seven acres, and 200 feet in height, constructed of large *adobes* or sun-dried bricks. On the summit there were probably buildings, and the vast structure was, it seems most likely, used as a temple for religious rites, as well as for sepulture.

The palace of Chimu was of vast extent. The

great hall was one hundred feet long by fifty-two, the walls being covered with intricate and very effective series of arabesques on stucco, worked in relief. They begin from a terrace running along the wall, and rising seven feet from the floor, and the belt of arabesques is ten feet wide. A neighbouring hall, with walls stuccoed in colour, is entered by passages and skirted by openings leading to small rooms seven feet square, which were dormitories, or possibly store-rooms. A long corridor leads from the back of the arabesque hall to some recesses where gold and silver vessels have been found. The whole of these halls and passages form the excavated part of a vast mound, covering several acres. About 100 yards to the westward of this palace there was a sepulchral mound, where many relics have been discovered. The bodies were wrapped in cloths, woven in ornamental figures and patterns of different colours. On some of the cloths were sewn plates of silver, and they were edged with borders of feathers, the silver being occasionally cut in the shape of fishes. Among the ruins of the city there are great rectangular areas enclosed by massive walls, and containing courts, streets, dwellings, and reservoirs for water. The largest is about a mile south of the mound-palace, and is 550 yards long by 400. The



THE CITY OF NAUXA.

outer wall is about thirty feet high, ten feet thick at the base, with sides inclining towards each other. Some of the interior walls are highly ornamented in stuccoed patterns; and in one part there is an edifice containing forty-five chambers or cells, in five rows of nine each, which is supposed to have been a prison. The enclosure also contained a reservoir, 450 feet long by 195 broad, and sixty feet deep.

There cannot be a doubt that these Chimu ruins represent the work of a highly-civilized people. This is shown by the admirable arrangements for water supply, the elaborate character of the internal arrangements in the buildings, their vast extent, and the tasteful designs both on the arabesque walls, and as displayed in the utensils of silver and clay, and in the cotton fabrics. The gold and silver vases are very thin, with ornaments struck up from the inside, and plaques have been found representing groups of figures with trees in silver. Knives and agricultural implements in bronze, lances or javelins and war-clubs in metal have also been found; and the pottery, like that of the Yncas, is of every form and shape, most frequently moulded in the shape of animals and fruits, and with double or quadruple spouts.

Southwards from Truxillo, in several of the coast

valleys, there are ruins of similar character, but of less importance than those in the plain of Chimú. At Huaca-tampu, in the Nepeña valley, there is an edifice 150 yards long, 80 broad, with outer walls of adobes about 24 high. It consists of open courts with platforms at the ends and round the sides, and was probably a temple. There are many similar structures; and on the verge of almost every valley there are remains of towns, temples, sepulchral pyramids, forts, and irrigation works, proving the former existence of a dense and industrious population. Near Lima there is a ruined city, at a place now called Caxamarquilla, which covers a square league—one great labyrinth of massive *adobe* walls. Here there are curious subterranean vaults, probably the store-rooms of the houses. Most of the coast ruins are on the edge of the deserts, so as not to occupy any space that might be used for cultivation. The famous ruins of the temple and city of Pachacamac are on the verge of the rich vale of Lurin, to the south of Lima; and the lofty mound of the temple overlooks the Pacific Ocean, from a height of 500 feet. It consists of four vast terraces with nearly perpendicular walls, at one time painted red. The summit is reached by a winding passage through the terrace walls, but the buildings have been

destroyed. Among the ruins of the city there is an instance of a perfect arch, built of large adobes.

The works of irrigation are, however, the grandest monuments of the coast people of Peru. The most interesting are those at Nasca, which are alluded to in another chapter. The subjects of the Chimú constructed dams at different elevations in the streams for drawing off the water, with channels to carry it along the higher slopes of the valleys. They also built vast reservoirs for the storage of water. One of these, in the valley of the Nepeña, is 1300 yards long by 900 broad, and is formed by a massive dam of stone, eighty feet thick at the base, which is carried across a gorge between two rocky hills. It was supplied by two canals, one brought from a distance of fourteen miles up the valley.

The coast of Peru was conquered by the Yncas upwards of a century before the Spanish invasion, and there are, therefore, several ruins of Ynca edifices. The most important is that called *Mamacuna* at Pachacamac, about a mile from the great temple-mound, which is unmistakably of Ynca origin from the form of the doorways and niches, and from other peculiarities. Another extensive range of buildings, fortress and palace, at the mouth

of the river of Cañete, was erected by the Yncas. It is known as the palace of Hervay, and stands grandly on a high rock near the sea shore, like Pachacamac. It is in two parts, that most inland consisting of five chambers, with an outer rampart and parapet. Overlooking the ocean there is a spacious hall, with fifteen ornamental recesses at one end, and a doorway leading to a dozen chambers opening upon an inner court. Hervay is built of *adobes*, and the walls were formerly stuccoed and painted.

The ruins of edifices and other public works, both in the *Sierra* and on the coast, supply materials for forming a judgment of the capabilities for civilization and advancement, possessed by the people who executed them. The Ynca masonry is unequalled throughout the world ; some of the monuments of the Peruvians are as durable and indestructible as the pyramids of Egypt ; their designs were tasteful and elegant, and their engineering works, especially those for irrigation, testify to their skill and ingenuity, and to an advanced stage of civilization.

It may prove useful to give a list of the architectural and other monuments of Peru, with their positions, and the authorities who have described them :—

IN THE SIERRA.		AUTHORITIES.
	<i>Cuzco</i> , The Sacsahuaman fortress	<i>Cieza de Leon</i> , <i>Acosta</i> , <i>G. de la Vega</i> , <i>Markham</i> , <i>Squier</i> : <i>Squier</i> gives a plan.
	„ Cyclopean work, <i>Calle del Triunfo</i>	<i>Markham</i> , <i>Squier</i> .
	„ <i>Colcampata</i>	<i>G. de la Vega</i> , <i>Markham</i> , <i>Squier</i> .
	„ Temple of the Sun	„ „
	„ Walls of the Palaces	„ „
	„ <i>Yucay</i> , Palace, <i>Andeneria</i>	„ „
Valley of the Vilcamayu.	<i>Ollantay-tampu</i> , Fortress and works	„ „
	<i>Pissac</i> , Fortress, <i>Andeneria</i> , <i>Ynti-huata</i> <i>tana</i>	<i>Squier</i> , <i>Wiener</i> .
Near <i>Cuzco</i> .	<i>Muyña</i> , Ruined city	„
Upper valley of <i>Vilcamayu</i> .	<i>Piquillacta</i> , Fortress	„
	<i>Temple of Cacha</i>	<i>G. de la Vega</i> , <i>Squier</i> .
Pass <i>Vilcañota</i> .	<i>La Raya</i> , <i>Ynca</i> <i>tampus</i>	„
	<i>Sondorhuasi</i> , Ancient roof, at <i>Azangaro</i>	<i>Markham</i> , <i>Squier</i> .
	<i>Isle of Titicaca</i> , <i>Ynca</i> bath, Temple	<i>G. de la Vega</i> , <i>Calancha</i> , <i>Ramos</i> , <i>Squier</i> .
	<i>Isle of Coati</i> , Convent, Temple	„ „
	<i>Hatun-colla</i> , Carved pillars	<i>Squier</i> .
Basin of lake Titicaca.	<i>Tiahuanacu</i> , Extensive ruins, carved doorway	<i>Cieza de Leon</i> , <i>Acosta</i> , <i>G. de la Vega</i> , <i>D'Orbigny</i> , <i>Castelnau</i> , <i>Rivero</i> , <i>Squier</i> , <i>Wiener</i> .
	<i>Sillustani</i> , Sepulchral towers or <i>chulpas</i>	<i>Markham</i> , <i>Squier</i> .
	<i>Acora</i> „ „ „	<i>Squier</i> .
	<i>Quellenata</i> „ „ „	„
	<i>Ullulloma</i> „ „ „	„
	<i>Escoma</i> „ „ „	„
Near <i>Cuzco</i> .	<i>Chinchero</i> , Palace	<i>Markham</i> , <i>Squier</i> .
	<i>Rimac-tampu</i> „	„ <i>Wiener</i> .
Between <i>Cuzco</i> and <i>Ayacucho</i> .	<i>Curampa</i> „	„ <i>Gibbon</i> , <i>Wiener</i> .
	<i>Huinaque</i> „	<i>Rivero</i> .
	<i>Vilcas</i> , Palaces and temples	<i>Cieza de Leon</i> , <i>Rivero</i> .
	<i>Huaraz</i>	<i>Wiener</i> .
North of Cerro Pasco.	<i>Huaruco (el Viejo)</i>	<i>Rivero</i> , <i>Raimondi</i> .
	<i>Caxamarca</i> , Palace (<i>Ynca</i> baths)	<i>Humboldt</i> , <i>Stephenson</i> .
	<i>Tower of Chupan</i>	<i>Rivero</i> .
	<i>Roads of the Yncas</i>	<i>G. de la Vega</i> , <i>Cieza de Leon</i> , <i>Zarate</i> , <i>Velasco</i> , <i>Humboldt</i> , <i>Markham</i> , <i>Rivero</i> , <i>Squier</i> .

ON THE COAST.		AUTHORITIES.
Near Truxillo.	<i>Chimu</i> , Palaces, mounds	<i>Rivero, Squier, Wiener.</i>
Valley of Nepeña	<i>Huaca-tampu</i> , Reservoir	<i>Squier.</i>
Valleys north of Lima.	<i>Chancayillo</i> , near <i>Casma</i> , Fortress	"
	<i>Fortress of Quisque</i>	"
	<i>Ruins of Alcapote</i>	"
	<i>Parmunca</i> , Fortress	<i>Cieza de Leon, G. de la Vega, Proctor, Rivero.</i>
Near Lima.	<i>Caxamarquilla</i>	<i>Squier, Markham.</i>
	<i>Huaca</i> , called <i>Limatambo</i>	"
	<i>Huacas</i> round Lima	<i>Hutchinson.</i>
	<i>Pachacamac</i>	<i>Astete, Hernando Pizarro, G. de la Vega, Rivero, Markham, Squier.</i>
Vale of Cañete.	<i>Hervay</i> , Palace and fortress	<i>Markham.</i>
Pisco Valley.	<i>Huaytara</i> , Temple	<i>Squier.</i>
	<i>Nasca</i> , Works of irrigation	<i>Markham.</i>
	<i>Coast road of the Yucas</i>	<i>G. de la Vega, Cieza de Leon, Zarate, Gomara.</i>

CHAPTER V.

ENUMERATION OF PROVINCES AND TOWNS.

THE administrative divisions of Peru, indeed of every country, should not be given as dry statistical facts, but should be traced from their origin, and followed in their successive developments. Before the discovery of America, Peru enjoyed the most efficient government the world has ever seen, and this efficiency was in part secured by well-arranged divisions for purposes of administration. The Yncas divided their vast empire into four governments corresponding with the four points of the compass. *Chincha-suyu* included the Sierra and coast districts north of Cuzco, as far as Quito; *Anti-suyu* was the eastern Andes and the Montaña; *Cunti-suyu* was the Sierra and coast to the west of Cuzco; and *Colla-suyu* was the Collao, or basin of Lake Titicaca. The whole empire was called *Ttahuantin-suyu*,¹ or the four governments. Each

¹ *Tlahua*, four in Quichua, *ntin* the comprehensive plural particle; *suyu*, a province or government.

was ruled over by a Viceroy, who superintended the workings of an elaborate system. Immediately under the Viceroys there were, throughout the provinces, *Huaranca-camayocs*, or officers ruling over one thousand men. Under these, in regular order, there were rulers over five hundred men, one hundred men, fifty men, and ten men. The duty of the decurion was to supply seed for sowing, wool for weaving, and to report the needs of his charge; to judge offences, and register vital and agricultural statistics. There was no poverty, and all tyranny and disorder were prevented by the action of *Tucuyricocs*, or itinerant inspectors. The superior officers collected the reports and revenues periodically, and all were submitted to the *Curaca*, or governor.

The Spanish Conquest threw this admirable but complicated system entirely out of gear. The Spanish Government first made extensive grants to the conquerors, which were called *encomiendas*, often comprising a whole province. The *Encomenderos* were feudal lords, holding the land with a right to the services of the people, and being responsible for the royal tribute. But they were bound to protect and act justly by the people, securing also the ministrations of a priest for each district. This system failed, and it soon became necessary to

revert to the Ynca system and seek aid from the old officials. The *Cacicazgos* were then instituted, which were native governments under hereditary chiefs, subordinate to Spanish *Encomenderos*. But it was too late. The Ynca machinery had been broken by Spanish tyranny and ignorance, and could not be pieced together again. The municipalities of towns were free from the rule of *Encomenderos*.

This feudal system would not work. In 1559 the Governor, Lope Garcia de Castro, divided Peru into *Corregimientos*, under officers named by the government, called *Corregidores*, whose functions were political and administrative. The divisions were, however, too small, there being seventy-seven throughout Peru, each in direct correspondence with the Supreme Government at Lima. In 1784 an important administrative reform was, therefore, made by the Viceroy, Don Agustin Jauregui. Peru was divided into seven *Intendencias*, or departments, namely Lima, Truxillo, and Arequipa on the coast, Cuzco, Guamanga, Huancavelica, and Tarma in the Sierra. Each was ruled by an officer called an *Intendente*, and included a certain number of the old *corregimientos*, now called *partidos*, six on an average. The *partidos* were under officers called *Sub-delegados*. This was a great improve-

ment, the number of officers reporting direct to Lima being reduced from seventy-seven to seven, and the efficient working of the administration being proportionally facilitated.

When the yoke of Spain was thrown off in 1824, the Republic wisely adopted the old administrative system, which had worked well, merely altering the names of the divisions and of the officers. *Intendencias* became departments, and *partidos* provinces. *Intendentes* gave place to prefects, and *sub-delegados* to sub-prefects. The provinces were divided into districts under governors, each including several parishes. A portion of the basin of Lake Titicaca was then added to Peru, as the department of Puno.²

Many changes have since been made in the territorial divisions of Peru, and it has been thought that these changes are too frequent, and have sometimes been made without sufficient cause. But undoubtedly the course of events necessitates rearrangement occasionally, and new departments and provinces appear generally to have been created with good reason. At present the Republic of Peru is divided into eighteen departments, two

² This region had been taken from Peru in 1778, when the Viceroyalty of Buenos Ayres was created. The province of Quito had been separated from Peru in 1718, to form part of the Viceroyalty of Nueva Granada.

littoral provinces, and what is called the constitutional province of Callao. The eighteen departments contain ninety-five provinces, or an average of five in each. There are 766 districts, or about eight in each province. The government also recognizes the existence of 65 cities, 70 towns, 1337 smaller towns, 641 villages, 110 hamlets on the sea-coast, and 6180 in the rural districts.

Reverting to the geographical divisions of the country, it will be as well to treat of the departments and their towns as they group themselves on the *Coast*, in the *Sierra*, and in the *Montaña*, although they are not always conterminous with the natural divisions; some of the Coast departments having provinces in the Sierra, and some of the Sierra divisions in the Montaña.

On the coast, commencing from the north, are the departments of Piura (13,931 *square miles*; *population* 135,709), of Lambayeque (*area* 17,939; *population* 85,984); Libertad, formerly Truxillo (*area* 15,649; *population* 147,541); Ancachs (*area* 17,405; *population* 284,091); Lima (*area* 14,690; *population* 261,414, including Callao); Yca (*area* 6295; *population* 60,111); Arequipa (*area* 27,744; *population* 160,282); Tacna (*area* 20,100; *population* 35,706); and Moquegua (*area* 42,387, including Tarapaca, *population* 70,788). Of these, Piura,

Truxillo, Ancachs, Lima, and Arequipa, also have provinces within the Sierra.³

The Sierra departments, commencing from the north, are Caxamarca (*area* 14,188; *population* 213,243); Huanuco, with Junin (*area* 33,822; *population* 287,859); Huancavelica (*area* 10,814; *population* 104,140); Ayacucho (*area* 24,213; *population* 147,909); Apurimac (*area* 62,325; *population* 119,246); Cuzco (*area* 95,547; *population* 237,083); and Puno (*area* 39,743; *population* 268,594). Of these, Huanuco, Junin, Apurimac, Cuzco, and Puno, have provinces in the Montaña.⁴

The departments of the Montaña are Amazonas

³ Three of these coast departments were original *Intendencias* of 1784; namely, Libertad (Truxillo), Lima, and Arequipa. Piura was made a littoral province in 1837 and a department in 1861. Lambayeque was made a department in 1874. The two were carved out of Libertad. Ancachs was made a department and Callao a constitutional province in 1836. Yca, carved out of Lima, was made a littoral province in 1855 and a department in 1868. Moquegua (including Tacna) was carved out of Arequipa, and made a department in 1839. In 1875 the department was ordered to be called Tacna, and Moquegua was separated and made a littoral province. Tarapaca was made a littoral province in 1868.

⁴ Of the Sierra departments, Cuzco, Ayacucho (Guamanga), Junin (Tarma), and Huancavelica were the original *Intendencias* of 1784. Caxamarca, carved out of Truxillo (Libertad), became a separate department in 1862. Huancavelica was suppressed and joined to Ayacucho in 1825, but re-created in 1839. Huanuco, carved out of Junin, was created a department in 1869. Apurimac, made out of Cuzco and Ayacucho, became a department in 1873; Puno in 1825.

(area 14,129 ; population 34,245) ; and Loreto (area 32,727 ; population 61,128). This gives a total area of 503,364 square miles for the whole of Peru.⁵

Piura corresponds with the first geographical section of the Coast Region. It is a desert intersected by the three fertile valleys of Tumbes, Chira, and Piura ; with two mountain provinces of Ayavaca and Huancabamba, on the upper courses of those rivers, and is the most northern division of Peru. The most northern town in Peru is Tumbes, near the shore of the gulf of Guayaquil, famous as the spot where Pizarro landed when he commenced the invasion in 1532.

San Miguel de Piura, the capital of the department, was founded by Pizarro at a place called Tangarara, in the Chira valley, but the site was afterwards removed to the more southerly valley of Piura. The towns, in all parts of Peru where the ground will allow of it, are built on the same plan, in squares or *quadras*, with the streets at right angles, and a quadrangular open space or *plaza* near the centre. Here is the *matriz* (mother church) or cathedral ; sometimes with a very ornamental façade in the renaissance style, with

⁵ Amazonas was created a department in 1832, carved out of Libertad, and Loreto was separated as a littoral government in 1853. In 1868 it was made a department.

two towers, often with the towers unfinished, in small towns usually with but one tower. The houses on the coast are flat-roofed,¹ with folding doors to the streets, leading into a court or *patio*, with rooms opening on it, the principal reception-room being generally opposite to the street gates. Occasionally there is a second story; but on the coast the houses of the poor are slightly built, while those of the better classes are of *adobes*, or large sun-dried bricks. Piura is a town of this class. It suffered from a severe earthquake in 1855. The sea port of Payta is on the shores of a well-protected bay, but the country round is a desert, and all supplies come from the valley of Chira. The distance to Piura over the desert is sixty-three miles. Payta is a port of export for the cotton of the neighbouring valleys, for the straw hats of Catacaos, a village in the Piura valley, and for some chin-chona bark from Loxa and Jaen. The best Peruvian sailors are from Payta, and from the fishing village of Sechura to the southward, at the mouth of the Piura river. Officially there are six cities in the department, Piura, Payta and Catacaos on the coast, Ayavaca and Frias in the Sierra on the head waters of the Chira and Piura rivers; and Huan-cabamba on the inland watershed.

Next to Piura, on the south, and separated from

it by the desert of Sechura, comes the new department of Lambayeque, watered by the rivers Morrope, Chiclayo, and Saña. The department contains the cities of Lambayeque, Chiclayo, and Saña. Formerly, in early Spanish times, the capital was Saña,⁶ called also Santiago de Miraflores, until that town was destroyed by a buccaneer in 1685. Lambayeque was then enlarged, and became the chief town of the province. It is on the banks of a river of the same name; and six miles from the little port of San José. Lambayeque is exposed to periodical inundations from freshes rushing down from the mountains. In 1791, in 1828, and again in 1870, great damage was caused by these floods. Seven miles south of Lambayeque is the town of Chiclayo, with its port of Eten, and there are two other little ports in the district called Pimentel and Cherrepe. The towns derive their importance from the estates in the valleys of Chiclayo and Saña, and round Ferreñafe, a great centre of rice cultivation. The port of Eten is particularly interesting, as being the home of a people speaking a peculiar language, probably a remnant of the race which formed the empire of Chimú.

The department of Libertad (formerly the Intendencia of Truxillo) bounds Lambayeque to the

⁶ Founded by the Viceroy Marquis of Cañete in 1558.

south. It is composed of the provinces of Pacasmayu and Truxillo on the coast; and of Otuzco, Huamachuco and Pataz in the Sierra, the latter beyond the Marañon. Its official cities are Truxillo, San Pedro de Loc, Otuzco, Santiago de Chuco, and Parcoy, the capital of Pataz. Its most northern fertile valley, that of Jequetepeque, does not contain any large city, though it is a centre of agriculture and trade, with the sea port of Pacasmayu. The capital of the department is Truxillo, further south, amidst the valleys of Chimu, Chicama, and Viru, which formed the centre of the empire of the great Chimu before the Ynca conquest.

The city of Truxillo was founded by Pizarro in 1535, and named after the capital of his native province in Spain. It is of an oval shape, and was surrounded by a wall with fifteen bastions, built by the Viceroy Duke of Palata in 1686, which has recently been demolished. Besides the cathedral with a bishopric founded in 1611, there are three parish churches, and formerly there were four monasteries and a Jesuits' college. The two nunneries still exist. The water for the city, and for the irrigation of the fruit gardens, is derived from the river Moche; and there is an excellent road, partly planted with fruit-trees, leading to the little seaport of Huanchaco. Further south are

the two other ports of Salaverry and Huañape. Truxillo, in Spanish times, was the abode of many rich families of good descent, several with "Titulos de Castilla." It is the most important city north of Lima, from which place it is distant 339 miles.

The next department to the south, that of Ancachs, does not contain any cities of note. It is composed of the provinces of Pallasca, Pumapampa, Huaylas, Santa, Huaraz, Caxatambo, and Huari in the Sierra ; and Santa on the coast. The towns are small, those on the coast being the markets for the surrounding estates in the valleys. The titular cities of the department of Ancachs are Caraz, Yungay, Huaraz, Carhuaz, and Huari, all small places in the Sierra. The seaports are Santa, Chimbote in the bay of Ferrol, and Samanca.

Lima, the capital of Peru, is nearly in the centre of the coast region, being 720 miles from the northern frontier, and 800 from that of Tarapaca. Its department consists of the provinces of Chancay, Lima, and Cañete on the coast ; Canta, Huarochiri, and Yauyos in the Sierra. There are two cities, Lima and Callao, the latter forming a constitutional province of itself.

Lima was founded by Pizarro on the 6th January, 1535. It was called "La Ciudad de Los Reyes" (the city of the kings) in memory of the day of its

K
(Karl)

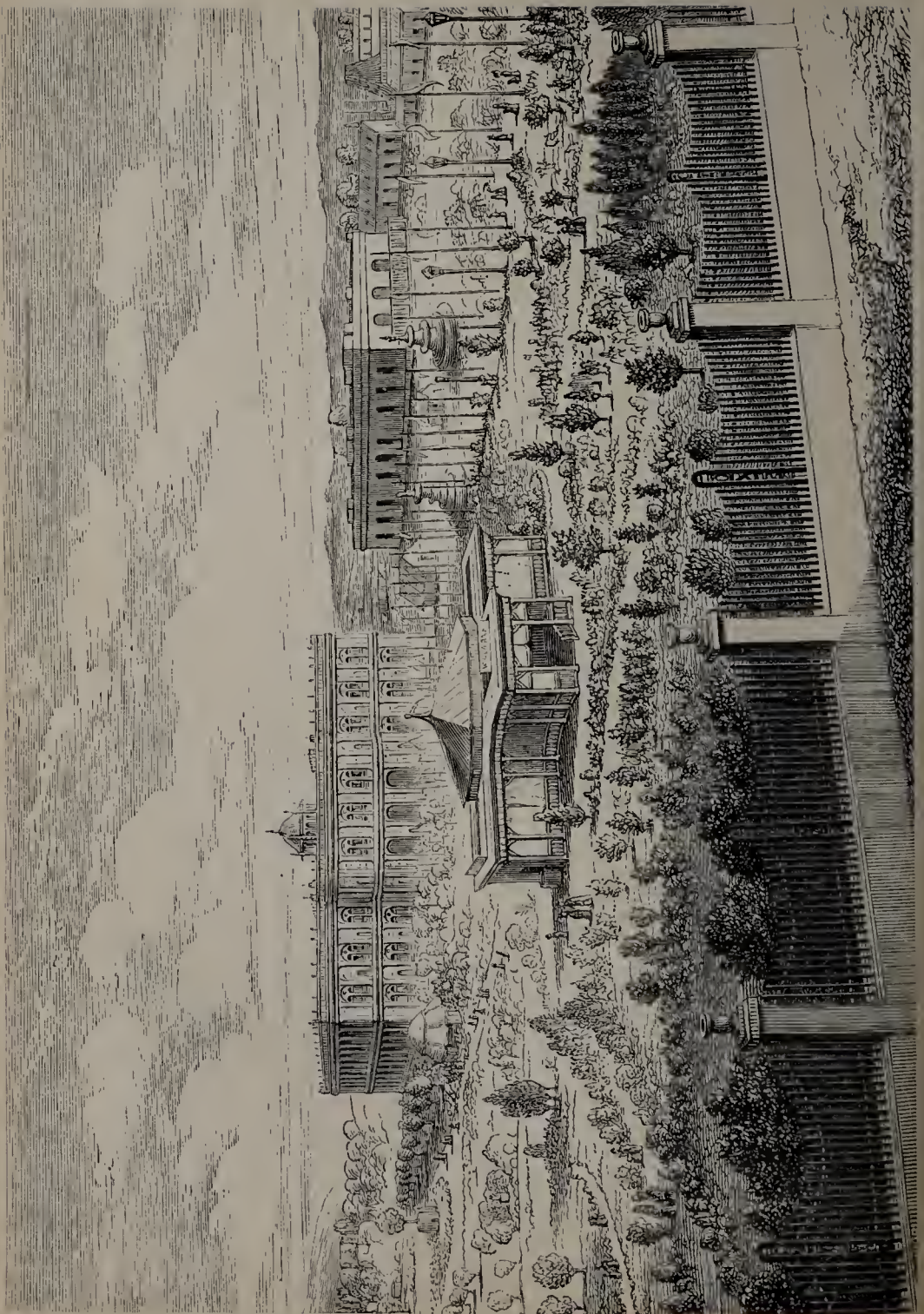
foundation, the Epiphany, and also of the kings of Spain, Carlos I. and his mother Juana. Its arms were three crowns of gold on an azure field, and above them the star of Bethlehem, with the motto "Hoc signum vera Regum est." The supporters were two crowned eagles, and on their heads the letters J. and C., initials of Carlos and Juana. The title was "the most noble and very loyal city." The name of Lima is a corruption of Rimac,⁷ the river which flows through it and irrigates the fertile plain between the western cordillera and the ocean. The city is at the foot of the barren rocky hills which form the last spurs from the Andes, and six miles from its seaport of Callao, the intervening valley of the Rimac being fertile, and furnishing abundant supplies of fruits and vegetables. The houses and churches of Lima are of *adobes*, or large sun-dried bricks, and lightly constructed, owing to the frequent earthquakes. Yet great pains were bestowed by the Spanish architects on the decoration of the façades of the cathedral and churches. The cathedral, the cloister of San Domingo, the tower of San Francisco, the former Jesuit church and cloister of San Pedro, and the Hall of the Uni-

⁷ *Rimac*, an oracle in Quichua, from a famous idol in a temple on its banks. *Rimac* is the participle of the Quichua verb *Rimani*, I speak.

versity of St. Mark, now used for the Congress, are not without architectural merit. The cathedral and archiepiscopal palace occupy one side of the great square ; the old palace of the Viceroy, a mean edifice, but with spacious rooms, is on another, and the other two are occupied by arcades with shops, and stories above, having latticed jalousies, which, combined with the flat roofs, give the town a Moorish appearance. The city was much embellished by successive viceroys. A stone bridge over the Rimac was erected by the Marquis of Montes Claros in 1618 ; the city was surrounded by a wall in 1685, by the Duke of La Palata ; a brass fountain, with a statue of Fame, was placed in the centre of the great Plaza in 1670, by the Count of Salva-¹⁶⁵tierra ; and the *alamedas*, or avenues, were planted by the Viceroy Don Manuel Amat. The city formerly had nineteen monasteries and convents, besides a university, and several schools.

Great changes have been effected in Lima during recent years. The railway to Callao was made in 1851, followed by other lines to the seaport of Chorrillos to the south, to Magdalena, to Chancay to the north, and up the valley of the Rimac. In 1873 the old walls were demolished, to make room for boulevards planted with trees. In the Plaza of the Inquisition (now called Plaza de la Indepen-

dencia) there is a fine bronze equestrian statue of the Liberator Bolivar, erected in 1858, cast at Munich, and designed by the sculptor Tadolini. In the same square is the University Chapel before mentioned, now used for the sittings of the Chamber of Deputies, a very stately and imposing hall, with walls of elaborately carved wood-work. The Senate holds its sittings in another building in the same square, which was formerly the Tribunal of the Inquisition. The hospitals of Lima, especially that of San Andres, are well conducted ; and the penitentiary, due to the enlightened exertions of Don Mariano Paz Soldan, is a model which it is to be hoped will some day be imitated throughout Peru. Commenced in 1856, the foundations, basement, and first floor are entirely of a hard porphyritic stone brought from a quarry two miles off, the entrance being up four broad steps, all cut out of a single block. The second floor is of bricks. Wards for men, women, and boys are separate, each with a well-ventilated work-room and exercise-yard, and the men have a place for meals. The penitentiary holds 208 men, fifty-two women, and fifty-two boys. The drainage of Lima was formerly provided for by open, rapidly flowing streams of water, or *azequias*, in the centre of each street running north and south ; and numerous turkey



EXHIBITION PALACE AT LIMA.

buzzards, large black birds of the vulture type, acted as the scavengers. Now all the *asequias* are covered over, and converted into sewer pipes.

A national exhibition was opened at Lima in 1872, and the buildings, planned by Don Manuel Fuentes, including palace, theatre, gardens, concert and show-rooms, permanently remain on the southern side of the city. Here is the great statue of Columbus, removed from the *alameda*. There are two theatres in Lima, a cock-pit, and one of the largest bull rings in the world.

Lima, in Spanish times, was inhabited by many families of rank and pure Castilian blood. In the seventeenth century, twenty-nine Peruvian noblemen were created; in the eighteenth, there were fifty-four creations; in all eighty-three at the time of the declaration of independence in 1821, including one duke, forty-six marquises, thirty-five counts, and one viscount. Many of these remained in Peru, a large proportion in Lima, only using their titles among friends and relations. Lima has also contained men of science and letters, the Unanues and Barnuevos of former times being succeeded by the Paz Soldans, Vigils, and Fuentes of our own day. The ladies of Lima have always been renowned for their beauty, their graceful figures, and small feet. These charms were set off

by the dress called *tapada* (*saya y manto*) consisting of a skirt, formerly fitting close to the form, but afterwards made full, and a mantle sewn in at the



waist, passing over the head, and held so as only to show one eye. This was the walking-dress of the ladies in which they went to church and walked in the *alamedas*. It has now gone out of use. The Lima ladies are not only beautiful and vivacious, but many of them possess high

literary attainments. In 1873, two articles appeared in the "Revista de Lima," by ladies, which possess considerable merit. One is an essay on charity, entitled "El Hogar," and the other an allegory, entitled "Un drama en quince minutos." Another lady of rank has published a series of able treatises called "Conferencias Femininas," including an article on ethics and theology, which is characterized by lofty thought and eloquent teaching, and relates to the sound culture of the female mind in connexion with the domestic virtues.

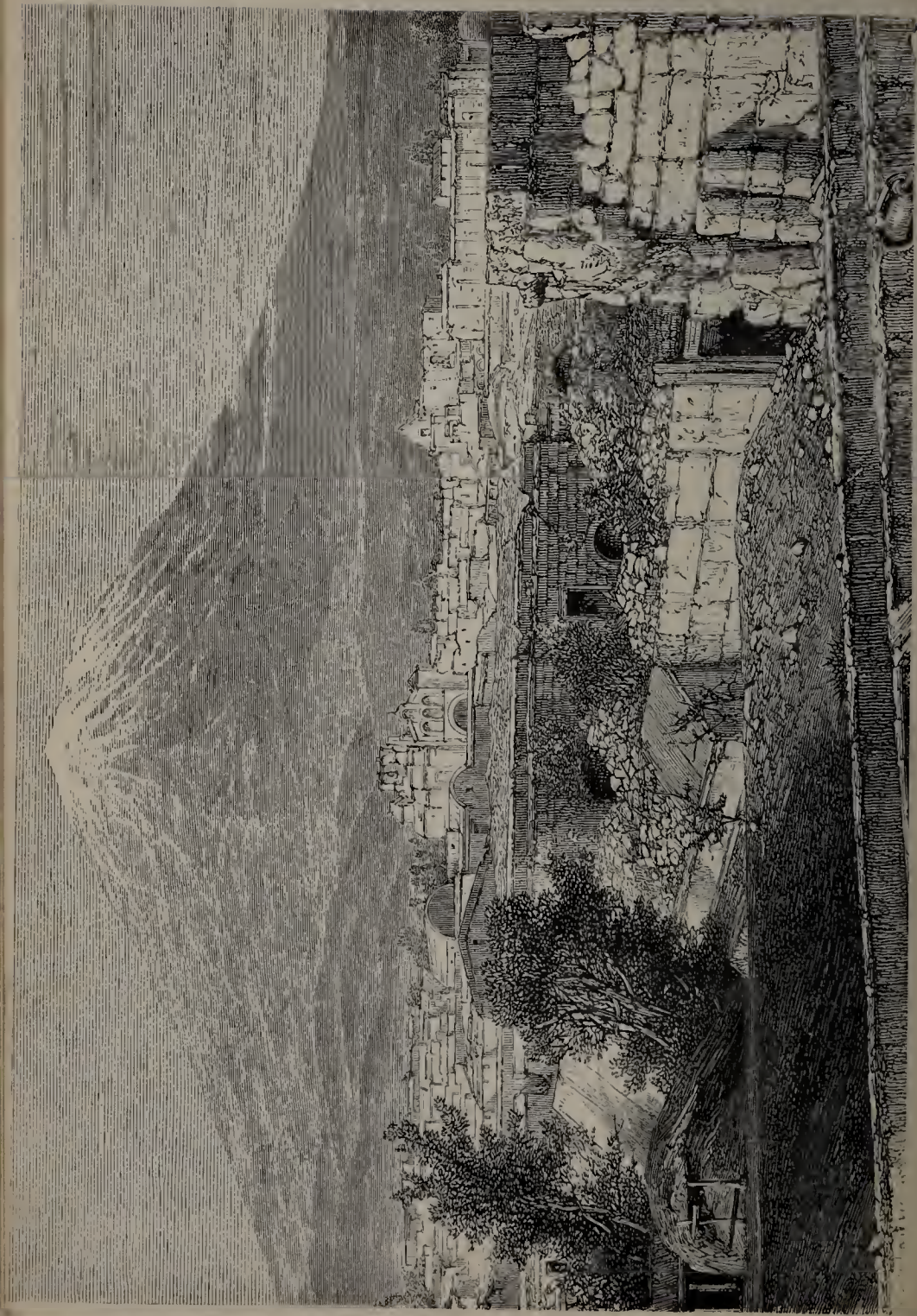
In 1712, the population of Lima was estimated at 37,000 by Frezier; in 1764, at 54,000, by Cosme Bueno; in 1820, at 64,000. The census of 1876, gives the population at 100,156;⁸ of whom 33,020 were Peruvians of European descent; 23,120 half-castes, 19,630 Indians, 15,378 foreigners, and 9008 negroes.

Lima, since 1851, has been connected with its seaport of Callao by a railway, the capital being 480 feet above the sea. The port was first at the mouth of the river Rimac. It was then moved some miles to the south, where the town stood, until it was entirely destroyed by the earthquake of 1746. This old town was surrounded by walls with bastions, and it had an excellent masonry

⁸ Paz Soldan argues, from the consumption of food and number of houses, that Lima must contain 200,000 inhabitants.

mole built in 1694. After its destruction, the present town of Callao was built a short distance to the north of the former site, with an extensive castle, having two circular towers, one at each end of a curtain facing the sea. The castle was called "Real Felipe," and the round towers were "Torreon de la Patria," and "Torreon de San Fernando." The town has increased considerably in size of late years, and great improvements have been made in the port. Along the fore-shore are the works of the Pacific Steam Navigation Company, the extensive concrete works of Mr. Hodges on the point, and four hotels. There are foundries, iron-yards, a steam flour-mill, railway works, gas works, and lines of store houses ; besides a floating dock, and a magnificent new mole and mercantile dock-yard under construction. The defences of Callao consist of the iron-clad tower of La Merced, of six inches thickness, armed with two Armstrong 200-pounders, the stone forts of Santa Rosa and Ayacucho, each with two Blakeley guns, 500-pounders ; the stone towers of Manco Ccapac and Independencia, the former with two 300-pounders, the latter with two Blakely 500-pounders, and the six-inch iron-clad tower of Junin, with two Armstrong 300-pounders. There are also twenty-five 32-pounders mounted.

The other towns on the coast, within the Lima



ARQUIPA AFTER EARTHQUAKE.

department, are the fashionable bathing-place of Chorrillos south of Lima, the ports of Chancay and Ancon, north of Callao, and of Cerro Azul to the south; and the agricultural towns of Lurin, Chilca, Mala, and Cañete; the latter surrounded by flourishing sugar estates.⁹

The department of Yca is composed of the two provinces of Yca and Chincha, each with a city. Chincha is in the centre of a sugar-growing district. Pisco is a sea port, for the export of the produce of the vineyards of the valleys of Pisco and Yca. Here excellent wine is made, and great quantities of a spirit called Pisco, which is universally used in Peru. That from the best grape is known as Italia. Yca¹ is a pleasant town in a fertile valley away from the sea, surrounded by cotton and vine estates, and forty-eight miles from Pisco; and further south, in the same department, are the charming little agricultural towns of Palpa and Nasca.

Then commences the much more extensive department of Arequipa, formed of the provinces of Union, Caylloma, Condesuyos, and Castilla in the Sierra; of Arequipa itself; and of Camaná and Islay on the coast. There are five officially created

⁹ Cañete, in the valley of Huarco, was founded by the Viceroy Marquis of Cañete in 1558.

¹ Founded by the Viceroy Conde de Nieva in 1562.

cities in the department, Caraveli and Chuquibamba in the Sierra, Camaná on the coast, Arequipa and Tiavaya in the valley of Arequipa. The city of Arequipa, from its elevation of 7266 feet above the sea, has a Sierra rather than a coast climate. In March the highest temperature is 67° Fahr., the lowest 58°. Arequipa was founded, by order of Pizarro, in 1536. It is in a fertile valley surrounded by barren hills, with the magnificent cone of the volcano of Misti rising immediately above it, other snowy peaks and ridges bounding the view to the eastward. The town is built of a white volcanic stone, the houses being usually of one story, constructed solidly with vaulted ceilings, the better to resist the shocks of earthquakes. The great Plaza, in the morning, is filled with gaily-dressed Indian women, some sitting under shades with their goods spread out on the ground before them, and others, in constant movement, threading their way among the sellers. The background was formed by the handsome cathedral of white stone, which was destroyed in the earthquake of 1868. The design of this edifice, which had been rebuilt in 1844, is favourably criticized by Mr. Fergusson in his "History of Modern Architecture."² The valley or *campiña* of

² Page 434.

Arequipa, about twelve miles long by five broad, is watered by the river Chile, a tributary of the Quilca, and contains several small towns and many farmhouses. The view from the surrounding hills presents a brilliant green expanse, consisting of fields of corn and lucerne (*alfalfa*), rows of tall willows, and gardens of fruit-trees, dotted with villages, and forming an emerald setting to the great white city. The wealth of the *campiña* is derived from its mules, and the *arrieros* or muleteers are a wealthy class of men. The families of the upper classes generally own estates in the neighbouring warm valleys of the coast; and their houses in the city are, as usual, built round a *patio* or court on which the principal rooms open. The sons are lawyers or farmers, while the more ambitious adopt the "*carrera de armas*." The ladies are considered the most beautiful and intelligent in Peru, sprightly and agreeable in society, full of intelligent curiosity, and invariably excellent musicians. They frequently sing the plaintive *despedidas* of their native poet Melgar, a patriot who was shot by the Spaniards in 1815. The society of Arequipa resorts to the baths of pure spring water at Tingo and Savandia during the summer, as well as to the medicinal sulphur-baths at Yura. Arequipa was separated by a wide

desert from its sea port of Islay, but it now has the terminus of its railway at the more southern port of Mollendo. There are agricultural towns in the valleys of Acari, Ocoña, Majes, Camañá, and Tambo; and small sea ports, besides Islay and Mollendo, at Chala and Quilca.

South of Arequipa is the littoral province of Moquegua with a pleasant town, valleys yielding wine and olive oil, and the small port of Ylo. Then succeed the department of Tacna with its port of Arica, through which the trade of Bolivia passes; and the littoral province of Tarapaca, with its dreary, desert-surrounded, but busy port of Iquique. Moquegua, Tacna, Arica, and Iquique are cities.

In passing from the coast to the Sierra there is a great change. The same regularity in laying out the plan of the towns, though always attempted, cannot invariably be attained, owing to the irregularity of the ground. High-pitched, red-tiled roofs, take the place of the flat roofs of the coast. The upper stories generally recede, leaving wide corridors under the overhanging eaves, and along the Plazas there are frequently covered arcades. Often there are fruit-gardens and green fields, waving with alfalfa and barley, in the outskirts, and a background of glorious mountain ranges.

The most northern of the Sierra departments is

that of Caxamarca, divided into the provinces of Jaen, Chota, Hualcayoc, Celendia, Caxamarca, Contumaza, and Caxabamba. The cities are Jaen, Chota, and Cutervo, Hualcayoc and San Miguel de Pallaques, Celendia, Caxamarca, and Caxabamba. Jaen de Bracamoros borders upon Ecuador, and on the forests inhabited by the Jeveros Indians. The town was founded by Diego Palomino in 1549, on the Chinchipe river, but is now a place of little trade. Caxamarca is the chief city of the department, and is interesting from having been the scene of the capture and death of the usurping Ynca Atahualpa. It has wide streets, and a handsome church completed in 1682. The great palace of Atahualpa was converted into a prison, a public office, and a house for the Corregidor, though nothing remains of it now but a wall about twelve yards long. A league to the east of the city are the thermal springs known as the baths of the Ynca.

The new department of Huanuco borders on Caxamarca to the south, and is composed of three provinces called Dos de Mayo,³ Huamalies, and Huanuco. Much of the area, especially of Huamalies, is covered with forests at the head waters of the Huallaga. Huanuco itself is the

³ The day, in 1866, on which the Spanish fleet was repulsed from Callao.

only city. It is prettily situated on the left bank of the Huallaga, which is there forty yards wide ; and the houses are built of *adobes* with tiled roofs, almost all having large gardens attached to them, filled with vegetables and fruit-trees. Its trade is chiefly with the lofty city of Cerro de Pasco, which it supplies with provisions, and with the villages down the Huallaga.

The department of Junin comprises the four provinces of Pasco, Tarima, Xauxa, and Huancayo ; its cities being Cerro de Pasco, Tarma, Xauxa, Concepcion, and Huancayo. Cerro de Pasco is the centre of a great silver-mining district, and is 13,200 feet⁴ above the sea. It is a very exceptional Peruvian town, for the houses are built without regard to regularity, on mounds of earth with deep cavities around them. The mouths of old mines are gaping everywhere ; and steam machinery, a short railway, and smelting furnaces, are at work throughout the district. From Pasco there is a considerable descent southwards to the city of Xauxa, the climate of which is said to be almost perfect for patients with pulmonary complaints. It is a charming little Sierra town, and near it, on the eastern watershed, is Tarma, another Sierra town beautifully situated in an amphitheatre of mountains, clothed to their

⁴ Herndon. Rivero gives the height at 14,279 feet.

summits with waving fields of barley. The climate is delicious, so that no doctor can find a living, and the one resident surgeon depends on a salary from the tax on spirits, and the tolls on the bridge of Oroya.

Huancavelica is a department of the loftier parts of the Cordillera, its capital owing its existence to the famous quicksilver-mines, and the building of the second town of Castro-Vireyna,⁵ between the central and western Cordillera, being due to the discovery of a rich silver-mine. The provinces are Huancavelica, Tayacaja, Castro-Vireyna, and Angaraes. Huancavelica and Castro-Vireyna are cities.

The department of Ayacucho has six provinces: Huanta, La Mar, Ayacucho, Cangallo, Lucanas, and Parinacochas. The two cities are Ayacucho and Cangallo. Ayacucho, the capital of the department, is the ancient city of Huamanca.⁶ (corruptly Guamanga), which was founded by Pizarro on June 24th, 1539. The town is hemmed

⁵ Named after the wife of the Marquis of Cañete, whose maiden name was Castro, 1595. Doña Teresa de Castro was a daughter of Pedro Fernandez de Castro, fifth Conde de Lemos, and wife of Don Andres Hurtado de Mendoza, fourth Marquis of Cañete, and Viceroy of Peru from 1590 to 1599.

⁶ When, after a victory, the Ynca Huiracocha was serving out llama flesh to his troops, he gave a ration to a falcon that was soaring over his head, saying, "*Huaman-ca*" ("Take, falcon!"). Hence the name.

in on three sides by mountains, on the steep slopes of which are fields of maize, fruit-gardens, and thickets of prickly pears. The streets are built at right angles, but with a considerable slope. In the centre is the great square, with the handsome stone cathedral on its south side, the others being occupied by private houses, with arcades of stone pillars supporting semi-circular arches, and above are broad covered corridors, on which the rooms open. In the early morning the plaza presents a most animated scene, being covered with huge framework shades stuck in the ground, under which crowds of Indian women and girls sell their fruit and vegetables. There are twenty churches, all built of stone, and generally with handsome towers. Ayacucho contains many good families, and the society is very agreeable. The Marquises of Mozobamba and Valdelirios belonged to the district, their families being now represented by Señores Tello, Fernandez, and Ruiz. The name was changed to Ayacucho to commemorate the decisive battle which was fought on a table-land so called, a few miles off, on the 9th of December, 1824. The city of Ayacucho is 8580, the battle-field 10,240 feet above the level of the sea. Here the country is very mountainous, with many deep and fertile gorges. Huanta is a

pleasant little town at the foot of high mountains to the north of Ayacucho. Lucanas and Parinacochas are in lofty and very secluded valleys between the central and western cordilleras; the latter on the banks of a large brackish lake, frequented by flamingoes and all sorts of water-fowl.

The Apurimac department has been formed by the two provinces of Andahuaylas and Abancay, on the road from Ayacucho to Cuzco, and by three provinces on the slopes of the central cordillera, in a secluded mountainous region, drained by the head waters of the Apurimac and its tributaries, called Cotabambas, Aymaraes, and Antabamba. The lovely and fertile valley of Andahuaylas contains three small towns called Talavera, Andahuaylas, and San Geronimo. Through the valley flows a river, bordered by tall trees, while here and there large fruit-gardens slope down to its banks. Every part of the valley is carefully cultivated, and fields of wheat cover the mountain slopes. The pretty little towns are embosomed in verdure. Abancay is also surrounded by fruit-gardens, and many clumps of venerable trees, and there are several sugar estates in the valley. The river Pachachaca flows across it, and is spanned by a picturesque old bridge of the 16th century. Looking from the town of Abancay across the

river, a mountain rises almost immediately from its banks, to such a height that its rocky summits are covered with eternal snow, while the productions of the country may be seen at one glance on its sides. Near the summits are large flocks of alpacas, grazing on the long *ychu*; directly beneath them are sheep and cattle; lower down extensive patches of barley and potatoes; then broad fields of maize in terraces, with apple and peach-trees; and at the foot of the mountain are sugar-cane fields, orange groves, and pine-apples.

Cuzco is the central and most important department of Peru, consisting of twelve provinces, namely, Cuzco, Urubamba, Calca, Anta, Quispicanchi, Paruro, Acomayo, Chumbivilcas, Canchis, Canas; and Paucartampu partly, and Convencion wholly in the *Montaña*. The city of Cuzco, the capital of the Empire of the Yncas, is believed to have been founded in the 11th century, in $13^{\circ} 31'$ S. latitude, $74^{\circ} 24'$ W. longitude, on a table-land 11,380 feet above the level of the sea. The plain is bounded by mountains on either side, and is covered with fields of lucerne and barley; and besides several picturesque country houses and farms, contains the two small towns of San Sebastian and San Geronimo. The city is at the foot of the famous hill of Sacsahuaman, which is divided from the moun-

tains on either side by two ravines, and down these flow the little rivers Huatanay and Rodadero, which form the drainage of the city. The ancient city was chiefly between the two streams with the square or court called the *Cusi-pata*, or place of joy, where all the great ceremonials of the Ynca court were performed. This is now divided into three handsome plazas. The houses are of stone, the lower stories being to a great extent of the wonderful and imposing Ynca masonry, too massive either for the assaults of time or the hand of the destroyer. The upper stories, roofed with red tiles, are of later date. Handsome church towers rise here and there, and the buildings of Cuzco are certainly the finest in Peru. The cathedral is raised on the walls of the palace of Ynca Huiracocha. The church of the Dominicans, with its cloisters, occupies the site and walls of the great Temple of the Sun. The lofty and graceful church of the Jesuits, facing the cathedral, was once the palace of Huayna Ccapac, but the most beautiful edifice in Cuzco is the cloister of the Mercedarios, with arcades raised on elaborately carved pillars and arches. There is now always an air of sadness resting on the imperial city, grand and imposing still in its decay. But the society is charming, the hospitality is cordial and without

stint ; and here alone can the traditions of the Yncas be received from their direct and cultured descendants. Frequent as religious ceremonies and processions are throughout Peru, in Cuzco they excel in splendour ; the balconies are hung with carpets, and crowded with all the rank and fashion of the old city, while the whole Indian population makes high holiday. A few miles from Cuzco is the warm vale of the Vilcamayu, the most enchanting as well as interesting spot in Peru, alike attractive for the marvellous beauty of its scenery and for its historical associations. Here are the delightful towns of Urubamba and Calca, Sicuani and Tinta ; as well as the Ynca palace of Yucay, the temple of Cacha, and the ruins of the Ollantay fortress.

The most southern department in the Peruvian *Sierra*, in the basin of Lake Titicaca, is that of Puno, consisting of six provinces : Puno, Chucuito, Azangaro, and Huancané, round the shores of the lake, Lampa to the north, and Carabaya to the east, mainly within the region of the *Montaña*. Puno owes its origin and former prosperity to the rich veins of silver ore in the surrounding hills. The streets slope by a gradual descent towards the lake, and the houses are built of small-sized brown *adobes*, with roofs of thatch or red tiles, the courtyards being neatly paved with round pebbles and bones of llamas, in patterns. Wool and silver

are the great staple products of the department, and an enormous quantity of the precious metal is the concealed property of the Indians. The smaller towns of the department are all at a height of upwards of 12,000 feet. Lampa, on the road from Puno to Cuzco, has a fine church, dating from 1685, with a dome of yellow, green, and blue glazed tiles, of which there was once a manufactory in the town. Here the temperature in April is from 37° to 58° , with clear skies. Azangaro is the town of next importance in the department, and is *par excellence* the city of hidden treasure. It was here that the gold and silver was concealed which was being brought for Atahualpa's ransom, when the Indians heard that the Ynca was already dead. "Away from the road with it!" was the cry. "More distant." (*Asuan-caru.*) All attempts to find it during the succeeding centuries have failed; but some Indians know the place. Other upland towns are Huan-cané, Pucara, Crucero—cold and bleak, surrounded by pasture-lands, with patches of potato and quinoa cultivation. The cities of the department are Puno, Chucuito, and Lampa.

In the Montaña there are a few mission stations, originally founded by the Franciscans, and some later settlements. The two forest departments are Amazonas and Loreto. The former includes the

provinces of Bongara, Luya, and Chachapoyas; and has three official cities, namely, Chachapoyas, Lamud, and Luya. Loreto consists of Alto Amazonas, Bajo Amazonas, Moyobamba, and Huallaga; the two former on the main stream of the Marañon, the two latter on the Huallaga. Moyobamba, Rioja, and Lamas are called cities; but these, as well as Loreto, Iquitos, and Nauta, on the Marañon; Chasuta and Tarapoto, on the Huallaga; and Sarayacu, on the Ucayali, are merely villages, into which the friendly Indians have been gathered, with a chapel and plaza. Beyond a few clearings they are surrounded by forest.

The positions of the capitals of the departments of Peru are as follows:—

Cities.	Latitude.	Longitude.	Elevation.
miles.	° ' "	° ' "	feet.
Piura	5 11 1 S.		
Payta to Chiclayo . . . 156			
Chiclayo to Truxillo . . 132	8 6 9 S.	81 26 37 W.	200
Huaraz			9830
Truxillo to Lima . . . 340	12 2 34 S.	79 26 29 W.	480
Lima to Yca 165	14 4 33 S.	77 50 31 W.	
Yca to Arequipa 498	16 24 28 S.	74 21 0 W.	7850
Arequipa to Tacna . . . 240	18 0 36 S.	72 38 6 W.	1980
Arequipa to Moquegua . 150			
Iquique	20 12 30 S.	72 34 54 W.	
Caxamarca	7 8 38 S.	80 55 37 W.	10,128
Huanuco	9 55 0 S.	78 1 37 W.	5880
Huanuco to Xauxa . . . 152			
Huancavelica	12 54 0 S.	77 18 37 W.	13,100
Ayacucho			
Abancay			
Cuzco	13 30 55 S.	74 24 30 W.	11,380
Puno	15 50 28 S.	72 11 54 W.	12,496
Chachapoyas	6 7 44 S.	78 55 37 W.	

CHAPTER VI.

AGRICULTURE AND COMMERCE.

THE resources of Peru, before the Spanish conquest, consisted of its silver and gold and copper ; of its vicuña and alpaca wool, of its maize and coca crops, of its potatoes and quinuas, of its medicinal plants, of its cotton crops, maguey fibre, fruits and vegetables, and of its guano deposits. The Spaniards introduced horses and asses, cattle, sheep, goats, and pigs, which all multiplied rapidly. The first time that bullocks were yoked to a plough on the plain of Cuzco was in 1550, about fifteen years after the conquest. In 1554 a knight bought ten cows at Lima for 1000 dollars. The first donkey arrived at Cuzco in 1557, to breed mules from the mares of Garcilasso de la Vega, the historian's father. Sheep came to Cuzco in 1556, and they multiplied so that the wool was soon cheap and plentiful. The introducer of wheat and barley was a lady named Maria de Escobar, who brought some to Lima,

and it was considered so precious that for three years it was only used as seed. Francisco de Caravantes, one of the first conquerors, introduced the cultivation of grapes, bringing the first vines from the Canary Islands ; and in 1560 vineyards had been established in a valley near Cuzco. In the same year Antonio de Ribera brought out olive-plants ; and at that time oranges, figs, and pomegranates had also been introduced, as well as peaches, quinces, apples, and pears. The first sugar-cane estate was at Huanuco, whence the cultivation spread to the coast valleys. Lettuces, endives, radishes, spinach, beet-root, mint, coriander, artichokes, carrots, and parsley had all been introduced and cultivated before 1560 ; as well as beans, peas, rice, mint, lavender, and fennel ; and the spinach and endive multiplied in such a way in the valley of the Rimac, that a horse could not force its way through them. Wheat yielded 300 to 450 *fanegas* for one ; and it is alleged that five horses were tethered under the shade of one radish in the valley of Cusapa. When first introduced, all these European products were marvelously prolific, and many of them have made very important additions to the permanent wealth of Peru.

The chief crops of the fertile coast valleys are sugar, cotton, and grapes, of which cotton is

indigenous. Sugar cultivation is a great source of wealth, and there are estates throughout the coast departments, but especially in that of Lima. In the valley of the Pativilca there are eight sugar-cane estates, and in Chancay there are three; the rest being cultivated with maize and alfalfa, or devoted to grazing purposes. Nearer the capital, in the valley of Carabayllo, the sugar-cane is cultivated in upwards of six estates, with machinery for the manufacture of sugar, "chancaca" or brown sugar-loaves, and rum. South of Lima there are three estates with steam machinery, in the valley of Lurin; while that of Cañete is one vast sheet of sugar-cane, divided into seven flourishing estates. On the estate of Unanue, belonging to Don José Unanue, there is a very fine country house, and tramways worked by steam, but the motive power for the machinery is water. Two estates are worked by steam; and there are other estates in the Chincha valley and further south. In 1859 the sugar exported from Peru, grown by Chinese and free negro labour, was valued at 90,000*l*. In 1876 it had increased to 71,722 tons, valued at 1,219,000*l*.; whilst in 1877 the amount was estimated at 85,000 tons, worth 1,360,000*l*. Of this quantity 63,370 tons went to Great Britain, 18,000 to Chile, and 6000 to other countries, leaving 12,000 for home consumption.

Cotton, the indigenous product of the coast valleys, is next in importance to sugar. The staple of Peruvian cotton is longer than New Orleans or any indigenous Indian cotton, though shorter than Sea Island or Egyptian. Its mean length is 1.30 inches, while that of Sea Island is 1.61, of Egyptian 1.41, of Brazilian 1.17, of New Orleans 1.02, of Indian 0.89. Peruvian cotton is a perennial, and was cultivated by the ancient people, who used a machine for separating the seeds, consisting of two rollers turning different ways with handles, very like the Indian *churka*. The chief cotton district in the south of Peru is the province of Yca, including the valleys of Yca, Palpa, San Xavier, and Nasca. A single proprietor, Don Domingo Elias, exported 400,000 lbs. of cotton in 1853 from Yca. Further north cotton is cultivated in the valleys of Casma, Truxillo, Chiclayo, Jequetepeque, Lambayeque, Piura, and Chira. From the two latter provinces the export, in some years, has been 20,000 cwts. The plant is here a perennial tree, yielding for ten years, and flowering twice annually. It is a variety of *Gossypium Barbadense*, and that from the south is *G. arbo-reum*. The yield per acre, in the Chira valley, is from 1500 to 2000 lbs.; and the estates are worked with intelligence and a due outlay of

capital, there being pumps and cotton-gins worked by steam, and on one estate a centrifugal pump. The cotton industry of Peru has been largely extending of late years, and in 1877 the value of the cotton exported was 160,000*l*.

The cultivation of the vine has also been a profitable industry ever since the Spanish conquest, in many parts of the coast, and also of the Sierra ; but Pisco and Yca, the Arequipa valleys, and Moquegua are the principal centres of vine-growing. Twenty years ago the Pisco yield amounted to 70,000 *botijas* of the spirit called Pisco, and 10,000 barrels of excellent wine, and it has since increased both in the Pisco and Yca valleys and in other parts. Rice is also cultivated, there being three large establishments for preparing it at Ferreñafe, near Lambayeque ; the export of rice from this district being, annually, 9,750,000 lbs. Olives are grown largely in the Tambo valley, near Arequipa ; cultivation of mulberries and silkworms has been begun, and for many years Mr. Blackwood successfully cultivated cochineal at Conaché, near Truxillo, his farm producing 125 bales of 150 lbs. each. But in 1871 a flood from the mountains destroyed \$17,000 worth of cochineal insects, with their cactus plants, in a few hours. Corn and alfalfa (lucerne), vegetables and fruits of

all kinds, are also cultivated in every valley, and there are many profitable grazing farms.

In Peru even the rocky islets and barren deserts are the sources of enormous wealth. The guano deposits were regularly guarded by the Yncas of Peru, each island being set apart for the use of a particular province, and the manure was fairly divided and profitably used in the coast valleys. Frezier, in 1713, mentions its use for the *aji* or Chile pepper crops. The three Chincha Islands, off Pisco, had enormous deposits which were long worked at. The exportation began in 1846, and from 1851 to 1860 the amount of shipping that loaded at the Chinchas represented 2,860,000 tons. Between 1853 and 1872 there were 8,000,000 tons shipped from the north and middle islands, and in 1872 these islands ceased to be worked for export to foreign countries. Now only native vessels load for use on Peruvian estates, but there are still believed to be many thousand tons on the north island. The Guanape Islands, about thirty-two miles from Santa, were first worked in 1869, and from that time to 1871, as many as 838,853 tons of guano have been shipped. There are two islands about 1130 and 750 yards respectively each, and the top of the guano deposit was, in 1872, 170 feet above the sea. There were then 460,000 tons left. At a

distance of sixty miles north of the Guañapes and about thirty-two miles seaward of Huanchaco, the port of Truxillo, are the three Macabi Islands, whence guano was first shipped in 1870. The nearest port on the mainland is Malabrigo, eight miles distant. The quantity of guano, in 1872, was estimated at 400,000 tons. Still further north there was a large deposit on the island of Lobos de Afuera, while the adjacent island of Lobos de Tierra contained another deposit. But the most important discoveries, since the exhaustion of the Chincha Islands, have been on the coast of Tarapaca, the most southern province of Peru. The deposits were carefully examined in 1874, and found to exist at the north point (called Chipana) of the table-land which extends to the river Loa in $21^{\circ} 23'$ S., on an elevated cliff called Huanillos in $21^{\circ} 15'$ S.; and at Pabellon de Pica, an immense cone rising out of the sea to 1000 feet, with slopes formed of guano deposits, in $20^{\circ} 58'$ S. In 1876 the quantity at Pabellon de Pica was calculated at 350,000 tons, all compressed into a hard mass by an upper crust of stones and sand. At Punto de Lobos, eight miles south, there were 200,000 tons, at Huanillos 1,000,000 tons buried under huge boulders of rock, and at Chipana also 250,000 tons, with some smaller deposits at Chomache, Islotas

de Pajaros, Quebrada de Pica, and Patache. The whole quantity of guano in these southern deposits is estimated at 1,800,000 tons; and in 1876 there were 300 ships taking cargoes. In the north there may still have been 600,000 tons at the Lobos Islands, Guañape, and Macabi, making a total quantity remaining of 2,400,000 tons. In the year 1869 the amount sold was 574,490 tons; in 1877 the amount was 310,042, and from 330,000 to 400,000 in the intervening years. There is a substance called *caliche*, supposed to be petrified guano, which is also coming into the market.

Since 1830 nitrate of soda has been exported from the province of Tarapaca, the chief port of export being Iquique. The principal deposits are found on the western side of the Pampa de Tamarugal, commencing where the level plain ceases, and not nearer to the coast than eighteen miles. The refining works, called *salitres*, are where the rough nitrate is broken into small pieces, and boiled; the nitrate being held in solution while the earthy matter falls to the bottom. The saturated solution is run into narrow troughs and exposed to the sun, when crystallization takes place. It is then ready for export. The Pampa de Tamarugal contains sufficient nitrate for the supply of Europe for ages. From 1830 to 1850

the export from Iquique amounted to 239,860 tons, some used as manure, some in the manufacture of nitric acid. The export reached its maximum in 1875, when 326,869 tons left the country. In 1877 only 213,940 tons. The trade employed 330,000 tons of shipping, and gave work to many thousands of hands. In 1877 the number of ships that cleared from the port of Iquique was 253. In May 1875 the Congress of Peru passed a law authorizing the government to purchase all the nitrate grounds and factories of Tarapaca, so as to establish a government monopoly; and progress has since been made with arrangements for the transfer.

The staple exports of the Sierra of Peru are silver and wool. The silver-mines extend along the whole length of the cordilleras, from Hualcayoc to Puno, and the mines are worked here and there, the great centre of mining industry being at Cerro Pasco. The ore, after being brought to the surface, is broken into small pieces and sent in bags to the works, where it is ground to powder in a water or steam-mill. It is then mixed with salt and toasted in earthen ovens, heated with the dung of llamas as fuel. The powder is then put in hide bags and piled on a floor of flat stones. Ten of these are laid in a row, making a *caxon* of 6250 lbs. The bags are then moistened with water, and quick-

silver is sprinkled through a woollen cloth. The mass is well mixed by treading with the feet and working with hoes, and left to stand for some days, until the amalgamation is complete. It is then thrown into a well, a stream of water is turned on, and men trample and wash it with their feet. The amalgam sinks to the bottom, and the mud and water are let off. The amalgam is hung up in bags of coarse linen, and the quicksilver oozes through and is caught in vessels below. The residue is *plata piña*, or pure silver, which is melted and run into bars. Each province has its special mining tribunal, the procedure being based on the colonial mining laws of Charles III. Altogether there are several thousands of mines in Peru, of which about 600 are worked. Between 1630 and 1849 the Cerro Pasco mines produced \$475,000,000 of silver, and this is but one of the many mining districts. In 1877 the Cerro Pasco mines produced 1,427,592 ounces of silver. There are others of equal value round Puno. In 1872 the ore exported amounted to 598,404*l.*, in 1874 to 175,927*l.* In 1877 the value of the silver exported was 575,000*l.*, of the copper 330,000*l.* Of the gold there is no return.

Mollendo, the terminus of the Puno railway, is at present the principal port for the export of wool.

In 1878 the amount of alpaca wool exported from Mollendo was 3,549,700 lbs., of vicuña wool 21,600 lbs., of sheep's wool 2,262,400 lbs. The total export of alpaca wool from the whole of Peru, in 1877, was 3,561,806 lbs., worth 362,622*l*. The value of all the wool exported was 600,000*l*.

From the Montaña the exported products are chinchona bark, coca, of which 8300 lbs. of leaves were shipped from Mollendo in 1877, coffee of the finest quality, cacao, tobacco, india-rubber, sarsaparilla, and some medicinal roots. The internal traffic in coca leaves is very considerable. The annual produce of coca in Peru is approximately 15,000,000 lbs., the average yield being about 800 lbs. an acre; and at Tacna the *tambor* of 50 lbs. is worth from \$9 to \$12.

There is an important transit trade to and from Bolivia, through the Peruvian port of Arica, which is worth about 1,000,000*l*. a year in imports, and from 700,000*l*. to 970,000*l*. in exports. The principal exports by this route are chinchona bark, coffee, tin, alpaca wool, tobacco, chocolate chinchilla skins, and silver. The chinchona bark amounted, in 1877, to 505,600 lbs., worth 66,914*l*. The copper was worth 116,366*l*., silver 439,000*l*., and tin 7693*l*. There was also 43,317*l*. worth of wool, 1640*l*. of coffee, and 2733*l*. of tobacco.

The total value of Peruvian exports to Great Britain was 5,232,305*l.* in 1878, and of imports from Great Britain 1,369,836*l.*, consisting mainly of manufactured woollen and cotton goods. As regards the carrying trade, the number of British sailing vessels that entered Callao in 1877 was 198 (tonnage 194,973), and of British steamers 522.

CHAPTER VII.

PUBLIC WORKS.

PERU is a country presenting the greatest difficulties in the execution of public works and no people have made more persevering and successful efforts to overcome the obstacles of nature than the Ynca Indians. The roads of the Yncas excited the admiration of the Spanish conquerors, because there was then nothing in Europe to be compared to them. The Sierra road was made over the most difficult mountains in the world for a distance of 500 leagues. It was six yards wide, level and paved. Rocks were broken through and levelled, and ravines were filled up, while great rivers were spanned by rope bridges. At short intervals there were small houses for the couriers and their families, and stores of provisions. The works of irrigation were not less admirable. In the valley of Nasca, for instance, there is only a small water-course which is dry more than half the year. The pre-

decessors of the Yncas cut deep trenches or *puquios* through the valley, and so far up into the mountains that the present inhabitants know not their origin. They are four feet high, with sides and roof of masonry. Lower down the valley they branch into smaller subterranean channels, which ramify in various directions, irrigating each estate by feeding the small surface streams. Thus entirely with the aid of this magnificent system of irrigation, the fifteen vine and cotton estates of Nasca are supported. Another high level canal, for the irrigation of pastures, was led for more than 150 miles along the eastern slope of the central cordillera. Roads and irrigation works were alike neglected by the Spaniards, but in recent years the Peruvian government has endeavoured to emulate the good deeds of the Yncas. Thus dams were, in 1875, constructed at the sources of the Rimac, near the snow-line, to regulate the supply of water at Lima during the summer months. The storage thus effected amounts to 30,000,000 cubic metres of water collected in nine reservoirs, and secures the prosperity of many rich estates in the valley below.

But it is in the system of railroads that modern Peruvians are beginning to vie with the deeds of the Yncas. Those which traverse the coast valleys,

in short lengths, are of great value, and will doubtless be remunerative. The most northern of these railroads connects the port of Payta with Piura. It was contracted for in 1872, is sixty-three miles long, and gives facilities for the shipment of the cotton crops. The next is forty-five miles long, from the port of Pimentel to Chiclayo, with a branch to Lambayeque, and is a private undertaking. The third line, from the port of Eten to Ferreñape, is also a private speculation. It is fifty miles long, and a branch affords facilities of export to several rich estates. The railroad from the port of Pacasmayu to Magdalena, a distance of ninety-three miles, is a State enterprise. It taps the fertile valley of Jequetepeque, and is eventually to be extended to Caxamarca. The next line, proceeding south, is twenty-five miles long, from the port of Malabrigo to Ascope, to open out the rich sugar and rice estates of the vale of Chicama. The line from the port of Salaverry to the city of Truxillo is a State enterprise to connect the capital of an important department with the sea. It is eighty-five miles long. The State railway from the port of Chimbote to Huaraz in the Sierra, is 172 miles in length, and is not completed, but fifty-two miles are finished. Several railroads radiate from Lima, the capital of the

Republic. The line connecting Lima and Callao was opened in 1851, and that from Lima to the bathing-place of Chorrillos in 1858. Another line has since been opened between these two, from Lima to Magdalena and the sea-shore. A line, northwards from Lima, runs for forty-three miles to Chancay. There is also a short private line in the valley of Cañete, from the port of Cerro Azul to the sugar estate of Casa Blanca. The next railroad, to the south, runs from the port of Pisco to Yca, a distance of forty-eight miles, opening up a rich cotton and vine district. The railroad from the port of Mollendo to Arequipa was completed in 1870, and runs for 107 miles over a waterless desert. In order to supply Mollendo with water, a pipe has been laid alongside the line for eighty-five miles. It starts from near Arequipa at an elevation of 7000 feet, and crosses the great desert, discharging 433,000 gallons in twenty-four hours. This is the largest iron aqueduct in the world. The next line is from the port of Ylo to Moquegua, a distance of sixty-three miles. Next comes the line of thirty-nine miles from Arica to Tacna, which was opened in 1857. Lastly as regards the coast, there are railroads, in Tarapaca, from the ports of Pisagua, Iquique, and Patillos, to the nitrate of soda works. That from Iquique is to be

177 miles long, and 110 are completed, running in a curved line for the convenience of the various works. The line from Patillos is sixty miles long, and that from Pisagua turns in an angle southwards towards the Iquique line. The whole Tarapaca system comprises 180 miles of rail.

A railroad was also commenced at Cerro Pasco in 1869, to connect the silver-mines with the town, and eight miles out of fifteen have been completed.

All these lines were judiciously planned to meet increasing needs ; and as they tap rich and valuable districts, they will surely be self-supporting, if not remunerative. But the same cannot be said of the stupendous works of great length which scale the cordilleras. They have been undertaken prematurely. The marvellous railroad from Callao and Lima, across the western and central cordilleras to Oroya, in the lofty valley of Xauxa, is to be 136 miles long. The work was commenced in 1870. Starting from Callao, it ascends the narrow valley of the Rimac, rising nearly 5000 feet in the first forty-six miles. It then threads the intricate gorges of the Andes by a winding, giddy pathway along the edge of the precipices, and over bridges that seem suspended in the air. It tunnels the Andes at an altitude of 15,645 feet, the most elevated spot in the world where a piston-rod is moved by steam,

and will terminate at Oroya, 12,178 feet above the sea. The difficulties encountered in its construction are without parallel. The engineers have threaded the mountains by a series of sixty-three tunnels, besides constructing enormous bridges, embankments, and cuttings. The bridge of Verru-



gas spans a chasm 580 feet wide, resting on three piers the centre one being 252 feet high of hollow wrought iron. Of this Oroya railroad $86\frac{3}{4}$ miles have been completed, and some heavy engineering work, including the piercing of the great tunnel, has been done beyond. The line has already cost 4,625,887*l*.

The other great line across the Andes connects Arequipa with Puno, on the shores of Lake Titicaca. On the first division 7,000,000 cubic yards of earth and stone were removed. The deepest cutting is ninety feet, the highest embankment 112 feet. On the second division the total amount of excavation was 9,858,000 cubic yards, the deepest cutting 127, and the highest embankment 141 feet. There is only one short tunnel, and four bridges. The summit is crossed in a cutting only six feet deep, 14,660 feet above the sea. On January 1st, 1874, the first locomotive reached the shores of Lake Titicaca. The line is 232 miles long. Meanwhile active steps were taken to introduce steam navigation on the sacred lake of the Yncas. A factory was established at Puno, two screw steamers of 20 tons and 40 H.P., were sent out from London in pieces, called the "Yavari" and "Yapura," and by March, 1874 both had been successfully launched. The cost of the Puno railway has been 4,346,659/. Another line is projected from Juliaca, near Puno, to Cuzco, of which sixty-six miles are finished.

The whole scheme of Peruvian State railroads, if completed, would have a length of 1281 miles, the private lines 496 miles, and two projects, partly private and partly State, 253 miles; altogether

twenty-two lines, with a length of 2030 miles, to cost 37,500,000/. The railroads from Mollendo to Arequipa and Puno (346 miles), from Ylo to Moquegua, from Pisco to Yca, from Arica to Tacna, from Lima to Chancay, Callao, Magdalena, and Chorrillos, are completed.

The first electric telegraph in Peru was put up between Lima and Callao on September 18th, 1847. There was no extension until 1867, when a National Telegraph Company was formed, to unite Lima with the capitals of the departments. A line was constructed from Callao to Payta, with stations at all the intermediate ports and towns of any importance, including Truxillo, Lambayeque, and Piura. Another was made from Lima to Yca, with seven intermediate stations. A third from Lima, by Ancon and Chancay to Huacho and Barranca. A fourth along the Oroya railway. A fifth from Mollendo, by Arequipa, to Puno. A sixth from Arica to Tacna.

In 1875 the company was dissolved, and the Government took all the lines ; but since that time only one line has been constructed, from Pacasmayo to La Magdalena. At the ports of Chorrillos, Mollendo, Arica, and Iquique there are stations of the submarine telegraph to Valparaiso. As that Chilian port is united by a land line with Buenos

Ayres, and Buenos Ayres by a submarine telegraph with England, Peru is also connected by telegraph wire with Europe.

The ocean traffic is of more importance to Peru than her railways, and the perseverance and enterprise which established the service of steamers along her coast conferred greater benefits on the land of the Yncas, and did more to advance the prosperity of her people than all the other enterprises and speculations of this century. These qualities were possessed and used for the west coast of South America by Mr. Wheelwright, to whom Peru and Chile owe a lasting debt of gratitude. He formed the Pacific Steam Navigation Company, and two steamers, called the "Peru" and "Chile," the first ever seen on the west coast, were sent out in 1840, to navigate between Callao and Valparaiso. The Company now has fifty-four steamers, with an aggregate tonnage of 106,980, which run regularly to all the ports from Panama to the extreme south of Chile, as well as by the ocean route and Magellan's Straits to Liverpool. The company has suitable works at Callao, covering 60,000 square yards. These include steam-cranes for loading and unloading, iron and brass foundries, artificers' shops with steam power, a steam bakery, and store-houses. Callao also has a floating-dock capable of

taking in a vessel of 21 feet draught, and of lifting 5000 tons.

In 1870 a new work, including docks and piers, called the *Muelle y Darsena*, was commenced at Callao by Mr. Hodges. On taking borings it was found that where the foundations of a new sea wall were to be, instead of gravel there was mud and soft clay about twenty feet deep, through which at certain periods of the year strong springs of water force themselves, highly charged with sulphuretted hydrogen gas. It is to these submarine springs that the phenomenon called "Callao painter" is due, when the paint work of ships is covered with a yellow-brown film. The discovery led to a revision of the scheme. It was necessary to excavate the bed of Callao Bay to a depth of sixteen feet and a width of 140 feet, upon the site of the sea wall. This space was then filled with rubble-stone and gravel up to within twenty-six feet of low-water mark, so as to form an artificial foundation, upon which the concrete blocks forming the dock walls were built. The total length of these walls is 4520 feet, enclosing a space of fifty-two acres with berthing accommodation for thirty large vessels. A sea wall has also been built to reclaim thirteen acres from the shallow waters of the bay, on which bonded warehouses will be erected.

There are eighteen steam cranes for loading and unloading, a triple line of railways along the whole length of the dock wall, lighthouse, capstans, and supplies of fresh water for shipping at eight points.

Other sea ports have been improved to keep pace with increasing trade. For instance, at Pisco, where there is a heavy surf, Mr. Wheelwright in 1859 completed an iron pier, 700 yards in length ; and at Eten the new mole on screw piles is 800 yards long. The Peruvian merchant navy in the end of 1877 consisted of 147 vessels, with an aggregate tonnage of 49,860. Of these eight were steamers.

While the means of communication have thus been rapidly developed along the shores of the Pacific, throughout the coast valleys and in parts of the Sierra, the boundless capabilities of the Montaña and its navigable rivers have not been lost sight of. Here, behind the Andes, Peru has a direct fluvial highway down the Amazon to the Atlantic Ocean. In 1861 two steamers were built in London for the Peruvian Government, called the "Morona" and "Pastaza," 180 feet long by twenty-five, of 500 tons burden and 160 horse power, to carry merchandise. At the same time two small steamers were ordered, called the "Napo" and

"Putumayu," of eighty tons, for exploring the rivers. Materials for a factory were also sent out. After some obstruction from the Brazilian Government, the two larger steamers went up the Amazon, and reached Peruvian waters in 1863. They then began to run from Yurimaguas on the river Huallaga, to the Brazilian frontier station of Tabatinga on the Amazon, a distance of 740 miles, touching at eleven intermediate ports.¹ The colony of Yquitos was founded on the left bank of the Amazon in $3^{\circ} 44' 20''$ S. and $73^{\circ} 7' 40''$ W., and became the central port of Peruvian navigation on the Amazon. Here the factory was established, and dwellings were erected for officials and artificers. From that time steamers have continued

¹ From Yurimaguas to

„ Santa Cruz	„	60 miles.
„ Laguna	„	40 „
„ Urarinas	„	75 „
„ Parmari	„	90 „
„ San Regis	„	60 „
„ Nauta	„	40 „
„ Yquitos	„	90 „
„ Pebas	„	103 „
„ Mancallacta	„	40 „
„ Peruate	„	12 „
„ Loreto	„	90 „
„ Tabatinga	„	40 „
Total .		740 „

in three days up stream.

to run without intermission. The traffic has had the effect of humanizing and civilizing the wild tribes, and has created a thriving trade which continually increases. Yquitos is now the capital of the department of Loreto, and centre of exploring enterprise. The objects of the Government are eventually to establish lines of steamers on all the great rivers as far as they are navigable. The Marañon can be ascended up to the Pongo de Manseriche, the Huallaga nearly to Chasuta. In 1866 the little exploring steamer "Putumayu" ascended the Ucayali with the object of finding the nearest navigable point to Lima. After a fight with the savage Cashibo tribe, the expedition entered the Pachitea, and reached its tributary the Mayru in $9^{\circ} 56' S.$ and $75^{\circ} 45' W.$, at a place named Puerto Pardo. This was the nearest point to Lima ever reached by a steamer on Amazonian waters. A commission then surveyed the route from Lima and Huanuco, to Puerto Pardo; and its advantages were proved. The River Perene was next explored, to ascertain to within what distance of Tarma that fluvial highway is navigable. This service was performed in 1868, but it was found that, owing to the velocity of the currents, a larger steamer should be supplied. The "Tambo," built specially for exploring, in the United States,

arrived at Yquitos in 1870, and it was then found that the Perene was navigable for the greater part of its course, but that communication with the Ucayali is cut off by falls. It was also ascertained that the Vilcamayu could be navigated as far as a place called Maynique. Further expeditions followed, and the extent to which the rivers of the Peruvian Montaña are navigable has now been established.

Recent years have seen rapid strides made in the construction of railroads to facilitate commerce on the coast and in the Sierra, while most persevering efforts have been exerted to establish communications along the fluvial highways which traverse the boundless forests of the Montaña. It is only thirty years since there was not a locomotive in Peru ; it is not twenty years since there was not a steamer on the Peruvian rivers of the Montaña. A great change has since been effected, the influence of which has worked in the interests of civilization, by facilitating intercourse, increasing wealth, and generally improving the condition of the people.

CHAPTER VIII.

GOVERNMENT.

NO adequate knowledge of the political state of any country can be obtained without reference to its previous history, because its present condition is the result of a long chain of events which cannot be overlooked if the acquisition of an intelligible view of the subject is the object of the inquiry. This is particularly the case in Peru, where the population is composed of distinct races, and where such opposing influences have long been at work.

In the earliest times that concern us, before the discovery of America, Peru was inhabited by a dense population, and the predominant tribe had attained to a very special type of civilization. The Government was intensely central, and yet a large proportion of the people was more or less employed in local administration. While every detail of the people's welfare, and even of domestic life, was controlled and regulated, the people were at the same time taught to be self-helpful, and were

bound to render specified service to the State, as well as to work in their own interests and for their families. The Ynca Government was an elaborate and very successful piece of administrative mechanism.

After the Spanish conquest Pizarro was empowered to grant *encomiendas* or estates to his followers, the inhabitants being bound to pay tribute, and give personal service to the grantee. In 1536 the *encomiendas* were extended to two lives. The exactions and cruelties of many of these adventurers were so intolerable that Las Casas and other lovers of justice, induced the Emperor Charles V. to enact the code known as the "New Laws," in 1542, by which the *encomiendas* were to pass immediately to the crown after the death of the actual holders ; a fixed sum was to be assessed as tribute, and forced personal service was forbidden. The "New Laws" excited a storm ; Gonzalo Pizarro rose in rebellion, and their unpopularity was so great that it was considered unsafe to enforce them. They were weakly revoked in 1545, and in 1550 the *encomiendas* were re-distributed. In 1629 they were granted for three lives.

Don Francisco de Toledo arrived in Peru as Viceroy in 1568. Though a harsh and stern man,

who always preferred expediency to justice, Toledo was an able administrator. He had the assistance of the Licentiate Polo de Ondegardo, and of the learned Judge Matienza. Toledo established the system under which the native population of Peru was ruled for the two succeeding centuries, and future viceroys referred to him as the great master of statesmanship, who was their guide, and to his ordinances as their acknowledged text-book. His "*Libro de Tasas*" (book of rules) fixed the tribute to be paid by the Indians, exempting all men under eighteen and over fifty. He found it necessary, in order to secure efficient government, to revert in some measure to the system of the Yncas. The people were to be directly governed by their native chiefs, whose duty was to collect the tribute as of old, to pay it to the Spanish *Corregidores*, and to exercise magisterial functions. The chiefs or *Curacas* had subordinate officials under them, called *Pichca-pachacas*, over 500 men, and *Pachacas* over 100 men. The office of *Curaca* (or *Cacique*)¹ was made hereditary, and its possessor enjoyed several privileges. Many *Curacas* were descended from the Ynca family, or from great nobles of the Ynca Court. In addition to the tribute, which was

¹ *Curaca* is the Quichua word. *Cacique* was a word brought from the Antilles, but often used by the Spaniards in Peru.

in accordance with native usage, there was the *mita* or forced labour in mines, farms, and manufactories. Toledo enacted that one-seventh of the male population of a village should be subject to conscription for this service ; but they were to be paid, and were not to be taken beyond a specified distance from their homes. There was also a class of Indians, formed in Ynca times,² which numbered 40,000 souls in 1570, called *Yanaconas*. They were forced to work as domestic servants. In 1601 an ordinance ameliorated their condition, and fixed their term of service.

In their legislation the Spanish kings and viceroys displayed an earnest desire to protect the Indians from tyranny, and to secure their welfare ; but in 1620 the Prince of Esquilache declared that “the arm of the Viceroy was not powerful against the negligence and maladministration of the Corregidores.” In 1697 the Viceroy Duke of Palata complained of the depopulation of the villages, caused by the forcible detention of Indians to work in the mines, in cloth and cotton workshops, and on Spanish farms. Other viceroys declared that the rapid depopulation of the country was due to this cause. The laws were good, but they were not obeyed, and the illegal enforcement of the

² Descendants of certain captives in war.

mita desolated the country. The women of the villages went out to help each other in sowing the fields, and at sunset they returned, hand in hand, singing a melancholy song, and lamenting the cruel fate of husbands and brothers. Even children were torn from their homes to work at twisting woollen and cotton threads in the manufactories. An air of sadness and desolation spread over the land.

The Inquisition affected European heretics rather than Peruvians; and the Indians, as catechumens, were exempted from its terrors. The tribunal was established at Lima, by a decree dated 1569. The first "Auto" was celebrated in 1581. The Inquisitors appear to have been actuated more by avarice and rapacity than by zeal against heretics. At first the Holy Office defied the viceroys and the civil courts, but its power was broken by the enlightened Viceroy Conde de Superunda in 1761, and it was finally abolished in 1813. The first burning of heretics was in 1581; the last in 1776.⁺ Between these dates fifty-nine heretics were burnt alive at Lima, and there were twenty-nine "Autos."^x

x 37 Autos

Another radical vice of Spanish rule was the strict system of monopoly and protection, and the policy by which all colonial interests were dis-

x First Auto on Nov 15 1573 (Arch. Loayza)

2nd Oct. 29. 1581 - 1st Auto by the Inquisition

+ Last Auto, July 17. 1806

regarded, and natives of Spanish descent were discountenanced and made to feel that their welfare was secondary to that of Spaniards born in the peninsula.

The Peruvian *Curacas* sorrowfully watched the gradual extinction of their people, protesting from time to time against the lawless exactions and cruelty of the Spaniards, and secretly hoping for an opportunity of revenge. At length their patience was exhausted, and in November, 1780, a chief named Tupac Amaru rose in rebellion. His original object was to obtain guarantees for the due observance of the laws, and their just administration. But when his moderate demands were only answered by cruel taunts and brutal menaces, he saw that independence or death were the only alternatives. He was a descendant of the ancient sovereigns, and he was proclaimed Ynca of Peru. A vast army joined him, as if by magic, and the Spanish dominion was shaken to its foundations. The insurrection all but succeeded, and a doubtful war was maintained for two years and a half. It lasted until July, 1783, and the cruelties which followed its suppression were due to the cowardly terror of the panic-stricken tyrants. Tupac Amaru did not suffer in vain. His death shook the power of Spain, and made it totter to its fall.

The corregidors were abolished in 1784, and a new and better administrative system was introduced. The *mita* was considerably modified; but the reforms came too late. From the cruel death of the Ynca date the feelings which resulted in the independence of Peru.

In 1814 another native chief, named Pumacagua, raised the cry of independence at Cuzco, and the sons of those who fell with Tupac Amaru flocked in thousands to his standard. The patriot army entered Arequipa in triumph, and was joined by many Spanish Americans, including the enthusiastic young poet Melgar. Untrained valour succumbed to discipline, and in March 1815 the insurrection was stamped out, but with less cruelty than disgraced the Spanish name in 1783. Ten years after the death of Pumacagua every Spanish official had been driven out of Peru.

The glorious attempts of the Ynca Indians inspired the natives of Spanish descent with the same longing for independence. But the large and well equipped army of the Viceroy made it necessary to seek for aid. Chile was free, and sent an army and fleet of deliverance under General San Martin. The Viceroy La Serna retreated into the Sierra, and the independence of Peru was proclaimed at Lima on the 28th of July, 1821. The

national flag of Peru is red, white, and red, perpendicular, with a shield in the centre of the white ; in chief a llama and a chinchona-tree, in base a cornucopia.

The Spaniards had a large army in the interior, but they were entirely cut off from succour or communication with the mother country. The end could only be a question of time. It came on the 9th of December, 1824. The Peruvians had received reinforcements from Chile ; forces had come from Colombia under General Bolivar, and many European officers had espoused the cause of liberty, chief and noblest among whom was the English General Miller. The Spanish army encamped on the heights of Condorcanqui, near the city of Guamanga ; the patriots faced it, on the little plain of Ayacucho. In the decisive battle which followed, the friendly auxiliaries nobly did their part, but the Peruvians displayed equal heroism. The left wing of the patriots consisted of Peruvian infantry, under Lamar and Gamarra, the latter a native of Cuzco ; while two Peruvian squadrons charged with the cavalry under Miller.

The battle of Ayacucho made Peruvian independence a reality. Many titled families went to Spain, but others remained in Peru. The heroes of Ayacucho inevitably obtained and long kept

the supreme power, while the official posts were filled for the most part by men without experience or training. Yet the gain to the country was immediate. All monopolies disappeared, trade was thrown open to the world; foreign merchants and settlers arrived, and the state of tutelage in which Peruvians of Spanish descent had long been kept, gave place to free and unrestrained contact with outside civilization. The Ynca Indians obtained equality and citizenship in theory, privileges which gradually and in course of time became real. The *mita* was entirely abolished, while the tribute remained. The latter was practically a tax on the produce of land. It was levied on every male between the ages of eighteen and fifty; and as nearly every individual between those ages cultivated his own piece of land, or shared the produce of a larger piece with others, the *tributo* was really a land tax, and not objectionable in principle. The independence brought with it, to all ranks of the people, solid and positive advantages which far out-balanced any evils caused by unwise or dishonest administration.

Three loans were contracted for in London, to carry on the war of independence, between 1822 and 1825, amounting to 1,816,000*l.*, with interest at six per cent.

A Peruvian Congress met in 1827, after General Bolivar had returned to Colombia, and elected Don José Lamar, the leader of the Peruvian infantry at Ayacucho, as President of the Republic ; but his defeat in an attempt to wrest Guayaquil from Colombia led to his fall, and Agustin Gamarra, an Ynca Indian of Cuzco, succeeded him in 1829. Although successful soldiers secured the presidential chair, the administration in the early days of the Republic contained men of rank, and others of integrity and talent. Among the former was the upright and amiable Count of Vista Florida, who was several times Vice-President, or provisionally in charge of the Government. Among the latter were Dr. Luna Pizarro, afterwards Archbishop of Lima, and Don José Maria Pardo. General Gamarra served his regular term of office, and after a discreditable display of sedition, he was succeeded in 1834 by Don Luis José Orbegoso.

Then followed an attempt to unite Peru and Bolivia in a confederation. The plan was conceived by Don Andres Santa Cruz, an Ynca Indian of high descent, who had been President of Bolivia since 1829. Orbegoso concurred, and the scheme, which had in it some elements of hopefulness and success, was carried out, but not without deplorable

bloodshed. The Peru-Bolivian Confederation was divided into three States—North Peru, South Peru, and Bolivia. During the ascendancy of Santa Cruz, Peru enjoyed a period of peace and prosperity. But his power excited the jealousy of Chile, and that Republic united with Peruvian malcontents, headed by General Gamarra, to destroy it. A Chilian army landed, and Santa Cruz was hopelessly defeated in the battle of Yungay, which was fought in the Callejon de Huaylas, on the banks of the river Santa, on January 20th, 1839.

A Congress assembled at the little town of Huancayo, in the Sierra, which acknowledged Gamarra as President of the Republic, and proclaimed a new Constitution on November 16th, 1839. But the new state of things was of short duration. On the pretext of danger from the party of Santa Cruz, war was declared upon Bolivia, which resulted in the defeat of the Peruvians at the battle of Yngavi, near the banks of Lake Titicaca, on November 20th, 1841, and the death of Gamarra. A very discreditable period of anarchy ensued, during which Gamarra's generals fought with each other for supremacy, which was ended by the success of another Indian, and on April 19th, 1845, General Don Ramon Cas-

tilla was proclaimed Constitutional President of Peru.

Ramon Castilla was an Indian of Tarapaca ; his father worked the refuse silver ores of the mines of El Carmen, and was the discoverer of the class of ores called *lecheador*, which is chlorobromide of silver. The young Ramon acted as his father's *leñatero*, or woodcutter. He afterwards entered the Spanish army, and on the arrival of the patriot forces from Chile in 1821 he joined the cause of his country, and was a colonel at the battle of Ayacucho. He was a small man of the true Indian type, with an iron constitution and great powers of endurance. He was an excellent soldier, brave as a lion, prompt in action, beloved by his men. Uneducated and ignorant, his administrative merits were small, but his firm and vigorous grasp of power secured for Peru long periods of peace. For this inestimable blessing Castilla deserves to be held in grateful remembrance by his countrymen. Ten years of peace followed the election of Castilla in 1844, and the brave old Indian has the credit of having commenced the payment of interest on the foreign debt. None had been paid since 1825, but in 1849 Señor Osma made an agreement with the bondholders to issue new bonds at 4 per cent. per annum, the rate to increase annually a $\frac{1}{2}$ per

cent. up to 6 per cent. Arrears of interest were to be capitalized, amounting to 2,615,000*l*. At the end of Castilla's term of office General Echenique succeeded him ; but in 1854 Castilla placed himself at the head of a revolution, and again found himself in power. A new Constitution was promulgated in 1856 ; the tribute of the Indians and negro slavery were abolished, and a grant of \$1,710,000 was voted as compensation to the owners of slaves. The mass of the people ceased to be taxed. The revenue was entirely derived from sales of guano, customs duties, licences, and stamps. In 1860 the Custom House produced \$3,553,030 ; sales of guano, \$14,850,000. The whole yearly revenue was \$19,300,000 ; the expenditure about \$19,522,055. The whole foreign debt amounted to 4,491,042*l*., and the internal debt to 4,835,705*l*. The foreign debt was annually reduced by means of a sinking fund.

When Castilla retired from office in 1862, he was succeeded by General San Roman, an old Ynca Indian of Puno, whose father had fought under Pumacagua. The Republic had then existed for forty years, during which time it had been torn by civil or external wars for nine years, and had enjoyed thirty-one years of peace and order. Very great advances had been made in prosperity during

the years of peace ; trade had increased, education had been extended ; many of the upper classes had educated themselves by European travel ; new wants had been created, and the condition of the Indians was much improved.

General San Roman died in 1863, his Vice-President, General Pezet, was replaced by Colonel Don Mariano Ignacio Prado, and a war with Spain practically ended with the repulse of the Spanish fleet from Callao on May 2nd, 1866. The war was unjust, the pretext being the alleged ill-treatment of some Spanish immigrants at an estate called Talambo, in the coast valley of Jequetepeque, which might easily have been arranged by arbitration. But the success at Callao aroused the enthusiasm of the people, and excited strong patriotic feelings.

Colonel Don José Balta was elected President of Peru on August 2nd, 1868, the present Constitution having been proclaimed on August 31st, 1867. The Senate is composed of Deputies of the Provinces, with a property qualification, and the House of Representatives of members nominated by electoral colleges of provinces and districts, one member for every 20,000 inhabitants. The district colleges choose deputies to the provincial colleges, who elect the represen-

tatives to Congress. There are forty-four senators, and 110 representatives. Executive power is in the hands of a President and Vice-President, elected for four years, with a Cabinet of five Ministers of Foreign Affairs, Interior, Justice, Finance and Commerce, and War. Local government in each village is in the hands of *Juntas Municipales*, which impose rates and regulate local funds. They are composed of influential inhabitants, elected by their neighbours, and they are productive of unmixed good, giving the pick of each village opportunities of becoming acquainted with public affairs, instilling habits of business, and training some for more important political duties. The *Alcalde Municipal* presides, and the members are the *Teniente Alcalde*, *Syndic*, two *Jueces de Paz*, and three *Regidores*. The *Juez de Paz* of each district judges minor offences. More serious charges are taken before the *Juez Derecho*, or judge of the province, and the capital of each department has a Superior Court, which hears appeals, and deals with cases of greater importance. The highest tribunal is the Supreme Court at Lima, which is a Court of Appeal. Under the President the executive is in the hands of governors of districts, who are usually inhabitants, sub-prefects and prefects nominated by the government.

The government of Colonel Balta entered upon a career of wild extravagance, and pushed forward the execution of railways and other public works with feverish haste, bringing ruin upon the country. In 1870 Colonel Balta raised a loan of 11,920,000*l.* at 6 per cent., and in 1872 another of 36,800,000*l.*, to include the old debt, and for the construction of railroads. His government also guaranteed a loan of 290,000*l.* for the Pisco and Yca railroad, so that its whole liabilities were 49,010,000*l.*, besides an internal debt of 4,000,000*l.* This was a startling outlook for the future ; but at the same time Balta's rule was throughout a period of peace and internal prosperity, ending in the opening of an International Exhibition at Lima. It is sad that a wretched military outbreak, in which the President was killed on July 26th, 1872, should have given it a tragic termination. The sedition itself was at once put down by the spontaneous uprising of the people on the side of law and order.

On August 2nd, 1872, Don Manuel Pardo became Constitutional President of Peru. He was the first civilian that had been elected, and it was hoped that he would inaugurate a new era of retrenchment and peace. The son of Don Felipe Pardo, a distinguished patriot of the revolution, Manuel was born in 1834. He received the first

part of his education at the college of San Carlos, in Lima, and completed it at the universities of Chile, Barcelona, and Paris, returning from Europe in 1855. He founded the first bank in Lima, had been Minister of Finance in 1865, and had held other offices. On May 2nd, 1866, when the Spanish fleet attacked Callao, Pardo was one of the defenders, and afterwards tended the wounded in their transit to Lima. When the yellow fever broke out in 1868, Pardo was President of the Benevolent Society, and nothing could exceed his exertions to alleviate the sufferings of the patients. He was a man of literary attainments, of moderate but enlightened views, and of high principle. He came to the helm at a period of great financial difficulty, and he undertook a thankless but patriotic task.

President Pardo found that the reckless extravagance of his predecessor had loaded the country with a debt amounting to 49,000,000*l.*, and that a sum of 2,450,000*l.* was needed to pay the annual interest. Previous to the election of Balta there had been a moderate external debt of 4,400,000*l.* A contract had also been made with Messrs. Dreyfus, of Paris, in 1869, in order to pay off a debt of 3,900,000*l.*, by the sale of 2,000,000 tons of guano, delivery of which was to commence in 1872.

Meanwhile the whole of the proceeds of the guano were absorbed in meeting the liabilities created by the foreign loans. Both demands could not possibly be met, and the payment of interest on the loans necessarily ceased in 1876. Since 1849 interest on the foreign debt had been regularly paid; but now the load of ruinous hopeless debt was crushing. All the new President could do was to curtail expenditure in every branch, and this he did with no sparing hand. His intention was to reduce it to 3,000,000%. The unnecessarily large army was a serious drain, consisting of 12,000 men, and actually 2000 officers. Here he made great reductions, retaining only a small effective force. The Ynca Indian makes a good soldier. He is sober, obedient, capable of enduring hunger and fatigue with marvellous resolution, and if well led he is indomitable on the battle-field. Pardo also caused careful surveys to be made of the guano deposits, and adopted the policy of making the nitrate of soda trade a State monopoly in the hope of deriving a larger revenue from it. He paid close attention to the emigration question, sending Señor Garcia y Garcia to make treaties with China and Japan, and enacting rules and safeguards for the welfare of the coolies. He actively promoted the exploration of the navigable rivers

in the Montaña, organized an efficient scheme for the collection of statistics, and for the census, and supported the interests of literature by contributing to the expenses of the great work on Peru by Raimondi. The palace was given up for public offices; and President Don Manuel Pardo continued to live in his private house, and was always accessible to all ranks of his countrymen. He was the best President that Peru has ever known. When his term of office came to an end, he was peacefully succeeded, on August 2nd, 1876, by General Don Mariano Ignacio Prado. Señor Pardo was afterwards President of the Senate, and his assassination by an obscure wretch, when entering the hall of the Senate in 1878, was a great calamity to his country.

General Prado made several attempts to come to some arrangement with the bondholders of the debt in which Peru had become involved through the combined exertions of reckless and incapable adventurers at home, and so-called "financiers" and gamblers abroad. The problem is not one that is capable of solution, and Peru would be well rid of the Balta legacy by handing over all the guano deposits and nitrate to the creditors who are clamouring for payment. The country might then commence afresh, with many elements of

prosperity, without the possibility of ruinous borrowing, and with a reasonable system of finance. The wealth derived from guano and nitrate deposits, by encouraging reckless expenditure and a system of unsound finance, has been a source of disaster and ruin, rather than of profit. Peru assuredly would be well rid of it. In 1875 the expenditure was estimated at 12,500,000*l.*, and the revenue at 10,220,000*l.* In 1878 the army consisted of eight battalions of infantry raised by conscription, 5600 men; of 1200 cavalry, in three regiments; of two brigades of artillery, 1000 men; and of 5400 gendarmerie; altogether 13,200 men. The navy consisted of the "*Independencia*," an ironclad ram, with twelve 70-pounders, and two 150-pounders; the "*Huascar*," a turret-ship, with three 500-pounders; and the "*Atahualpa*," and "*Manco Ccapac*," antiquated monitors (with three 500-pounders in turrets) which will only go five knots. The "*Union*," of fourteen guns, is also an ironclad. There were, in addition, the "*Pilcomayu*," the "*Victoria*," and "*Loa*," of two guns each; and six other steamers, the "*Callao*," "*America*," "*Chalaco*," "*Tumbez*," "*Chanchamayu*," and "*Colon*."

The disasters of Peru have culminated in a war with Chile, in defence of Bolivia, the cause of quarrel being a disputed boundary. A decree

raised the army to 40,000 men. The "Independencia" and "Huascar" were lost — one destroyed, the other captured—the ports were blockaded, and the province of Tarapaca was overrun. The guano and nitrate fell into the hands of the enemy. General Prado, feeling himself unequal to the situation, deserted his post and left the country. On December 23rd, 1879, Dr. Don Nicolas de Pierola became Dictator of Peru, with the title of Supreme Chief. Pierola is a native of Camaná, in the department of Arequipa, and was born in about 1840. He was educated at San Carlos College, in Lima, became a doctor of law, and has travelled in Europe. He was for some time Finance Minister under Balta, and has since made three attempts to overthrow succeeding governments. The Dictator has declared that the whole male population, with certain exceptions, from the ages of eighteen to fifty must enter the army on active service, and those from thirty to fifty the reserve (26th December, 1879). This is indeed a disastrous time for Peru, but there is nothing in the situation to preclude hope for the future. The country is too richly endowed by nature for prosperity to leave her shores for ever.

A complete list of all the Sovereigns and

Rulers of Peru will be useful for reference, and as a skeleton which may be endowed with the flesh and blood of historical facts, and decked with the clothing of imagination by those who desire to inquire further into an interesting subject.

YNCAS OF PERU,

(According to Garcilasso *Ynca de la Vega*).

The last twelve are certainly historical.

1021. Manco Ccapac.	1475. Huayna Ccapac.
1062. Sinchi Rocca.	1526. Huascar Ynca.
1091. Lloque Yupanqui.	1528-32. Atahualpa (usurper).
1126. Mayta Ccapac.	1532. Manco Ynca.
1156. Ccapac Yupanqui.	1553. Sayri Tupac.
1197. Ynca Rocca.	1560. Cusi Titu Yupanqui.
1249. Yahuar Huaccac.	1562. Tupac Amaru I. (be-
1289. Uira-ccocha.	headed 1571).
1340. Pachacutec Ynca.	1780. Tupac Amaru II. (ex-
1400. Ynca Yupanqui.	cuted 1781).
1439. Tupac Ynca Yupanqui.	

KINGS OF SPAIN WHO WERE SOVEREIGNS OF PERU.

1535. Charles V. (Hapsburg).	1700. Philip V. (Bourbon).
1558. Philip II. „	1746. Ferdinand VI. „
1598. Philip III. „	1759. Charles III. „
1621. Philip IV. „	1788. Charles IV. „
1665. Charles II. „	1808. Ferdinand VII. „

(Independence declared 1821.)

SPANISH VICEROYS OF PERU.

1. { 1533 } Francisco Pizarro, Marques de Atavillos (murdered,
to
1541.) 1541).
- 2—1544. Licentiate Christoval Vaca de Castro (Governor).

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- 3—1544. Blasco Nuñez Vela (Viceroy).
 - 4—1547. Licentiate Pedro de la Gasca (President of the Audiencia).
 - 5—1551. Antonio de Mendoza (fourth son of the Marques de Mondejar).
 - 6—1555. Andres Hurtado de Mendoza, Marques de Cañete.
 - 7—1561. Conde de Nieva.
 - 8—1564. Licentiate Lope Garia de Castro (Governor).
 - 9—1569. Francisco de Toledo (son of the Conde de Oropesa).
 - 10—1581. Martin Henriquez.
 - 11—1586. Conde de Villar Donpardo.
 - 12—1590. Garcia Hurtado de Mendoza, Marques de Cañete.
 - 13—1599. Marques de Salinas.
 - 14—1604. Conde de Monterey.
 - 15—1607. Marques de Montes Claros.
 - 16—1615. Principe de Esquilache (Borgia).
 - 17—1620. Marques de Guadalcazar.
 - 18—1629. Conde de Chinchon.
 - 19—1639. Marques de Mancera.
 - 20—1648. Conde de Salvatierra.
 - 21—1653. Conde de Alba de Liste.
 - 22—1661. Conde de Santistevan.
 - 23—1667. Conde de Lemos.
 - 24—1674. Conde de Castellar.
 - 25—1678. Melchor de Liñan y Cisneros (Archbishop of Lima).
 - 26—1684. Duque de La Palata.
 - 27—1689. Conde de Monclova.
 - 28—1707. Marques de Castel dos Rios.
 - 29—1710. Diego Ladron de Guevara (Bishop of Quito).
 - 30—1716. Fray Diego Morcillo Rubio de Auñon (Archbishop of Lima).
 - 31—1716. Principe de Santo Bono (Caracciolo).
 - 32—1720. Fray Diego Morcillo Rubio de Auñon (Archbishop)
 - 33—1724. Marques de Castelfuerte.
 - 34—1740. Marques de Villa Garcia.
 - 35—1745. Conde de Superunda (Manso).
 - 36—1761. Don Manuel Amat.

- 37—1775. Don Manuel de Guirior.
 38—1782. Don Agustin Jauregui.
 39—1785. Don Teodoro Croix.
 40—1790. Fray Don Francisco Gil de Taboada.
 41—1796. Ambrosio O'Higgins, Marques de Osorno.
 42—1801. Marques de Aviles.
 43—1806. Fernando de Abascal, Marques de la Concordia.
 44—1816. Joaquim de la Pezuela.
 45—1820. General Don José de la Serna (defeated at Ayacucho,
 Dec., 1824).

PRESIDENTS OF THE REPUBLIC OF PERU, &c.

- 1820 (June 23). General Don José de San Martin (Protector).
 1821 (July 28). Declaration of Independence.
 1822 (Jan. to Aug.). Marques de Torre Tagle (Supreme
 Delegate).
 1822 (Sept.). José La Mar, Felipe Alvarado, and the Conde de
 Vista Florida (Junta de Gobierno).
 1823 (Feb.). José de la Riva Agüero (President).
 1823 (June). Marques de Torre Tagle (Encargado del Mando).
 1824 (Feb.). Simon Bolivar (Liberator).
 1825 (April). Hipolito Unanue, and José Maria Pardo (Junta de
 Gobierno).
 1826 (Sept.). Andres Santa Cruz (Presidente del Consejo).
 1827 (June). Conde de Vista Florida (Gobernador Interino).
 1827 (Aug.). José de Lamar (President).
 1828 (June). Conde de Vista Florida (Vice-Pres., encargado).
 1829 (June). Antonio de la Fuente (Jefe Supremo).
 1829 (Aug.). Agustin Gamarra (President).
 1833 (Dec.). Luis José Orbegoso (President).
 1834 (Jan. 4). Pedro Bermudez (Jefe Supremo).
 1834 (Jan. 29). Luis José Orbegoso (President).
 1835 (Feb.). Felipe S. Salaverry (Jefe Supremo).
 1836 (Aug.). Andres Santa Cruz (Protector del Confederacion).
 1838 (Aug.). Agustin Gamarra (President).
 1841 (July). Manuel Menendez (Vice-President).

-
- 1842 (Aug.). Juan Crisostomo Torico (Jefe Supremo).
1842 . Francisco Vidal (Vice-Presidente encargado).
1843 (April). Manuel I. Vivanco (Director Supremo).
1843 (Nov.). Domingo Elias (Encargado).
1844 (Aug.). Manuel Menendez (Vice-President).
1845 (April). Ramon Castilla (President).
1851 (April). José Rufino Echenique (President).
1855 (Jan.). Ramon Castilla (President).
1862 (Oct.). Miguel San Roman (President).
1863 (Sep.). José Antonio Pezet (President).
1865 (Nov.). Mariano Ignacio Prado (JefeSupremo).
1868 (Aug.). José Balta (President).
1872 (Aug.). Manuel Pardo (President).
1876 (Aug.). Mariano Ignacio Prado (President).
1879 (Dec. 23). Nicolas de Pierola (Jefe Supremo).

CHAPTER IX.

EDUCATION AND LITERATURE.

THE civilization of the Yncas prepared them and their descendants for the acquisition and appreciation of European literature and art. The Ynca religion was highly imaginative ; its leading feature was the belief that all things in nature had an ideal or soul, which ruled and guided them, and to which men might pray for help. This was the popular creed, to which the people clung tenaciously, and it is not yet wholly rooted out. The gorgeous and imposing Sun-worship of their rulers, and the belief of the learned among them in a Creator called Pachacamac, were but developments of the religion of the people. All visible emblems and signs of these ideals were called *Huaca*, and they were represented in a thousand ways. The Yncas also worshipped their ancestors, the *Pacarina*, or forefathers of the *Ayllu* or lineage being idealized as the soul or essence of his descendants. The emblem to be worshipped was the actual body called *malqui*,

which was religiously preserved in its cave or *machay*, and on solemn festivals each *Ayllu* assembled with its *malqui*. The coast tribes appear to have believed in oracles, and to have been much given to charms and divination. The learned Yncas had an elaborate ritual of prayers and hymns; ancient myths were preserved in such songs as that beginning "Sumac Ñusta," which is not unlike a Vedic hymn, and the curious literary relic entitled "Ollanta," proves that the poetic and dramatic faculties were developed in the Ynca race.

Upon this civilized and cultivated people suddenly fell, like a destroying deluge, the Spanish conquest. An intolerant priesthood, with an organized system, attempted forcibly to crush out native traditions and modes of thought, and to substitute new ideas and beliefs. Where the old and the new assimilated, or were in sympathy, they partly succeeded. When this was not the case they failed, and got lip service only. But the attempt to destroy was resolute and systematic. Education and literature were at the mercy of a despotic priestly caste of foreigners. The cruel Friar Valverde was made Bishop of Cuzco, in 1534; four monasteries were founded in the city, and before long secular priests were established in

every village. The Archbishopric of Lima was created a few years afterwards, and Fray Geronimo de Loaysa was installed. He was accompanied by a similar swarm of clerics. The Bishoprics of Guamanga, Arequipa, and Truxillo, followed in 1612 and 1614. An inquisitorial system of catechizing and punishing then penetrated into every village and hamlet in the land. The people received new ideas, but, in spite of persecution, they did not forget their old and cherished beliefs. The proceedings of the Provincial Councils of Lima, which met six times, in 1552, 1567, 1582, 1591, 1601, and 1772, are very interesting, because the long strings of questions, that were drawn up for the priests to put to the people, have preserved many of the superstitions, and much of the old folk-lore, which would otherwise have been lost.

It must be said, on the other hand, that pains were taken to educate Mestizos and Indians of good family from the very first. As early as 1540 there was a school at Cuzco, where the young Mestizo, Garcilasso Ynca de la Vega, was taught Latin and arithmetic, in company with one young Ynca of pure blood, and many half-caste sons of the conquerors. Seeing how much aptitude his scholars displayed in learning grammar and the sciences, the good schoolmaster, Canon Cuellar,

exclaimed to the young Indians, "O sons! what a pity it is that a dozen of you should not be in the University of Salamanca." The teachings of the old Canon did bear fruit. Young Garcilasso Ynca de la Vega, not the least apt of his pupils, stored his mind with the traditions and history of his native land; he went to Spain, and his Royal Commentaries of Peru were published in 1609 and 1617. Without this work our knowledge of the civilization of the Yncas would indeed be limited. The Ynca prided himself on being a good Catholic, but at the same time he zealously and boldly defended his people, and showed a loving and tender regard for his gentle mother's kindred. Many years afterwards another Ynca Indian, named Juan de Santa Cruz Pachacuti, wrote a full account of the traditions of his ancestors, and of their rites and ceremonies, the manuscript being dated 1620.

The keen desire to instruct the people in the new religion, had the beneficial effect of preserving the language, for it became the duty of the priests to learn it. The Quichua grammar of Fray Domingo de San Tomas was published at Valladolid in 1560; one by Antonio Ricardo came out at Lima in 1586; and the grammar and vocabulary of Diego de Torres Rubio appeared at Seville in

1603, and went through four editions. The most copious dictionary of the Ynca language, which is now excessively scarce, was published at Lima by Fray Juan Martinez, in 1604. The dictionary, by the Jesuit Diego Gonzalez Holguin, followed in 1608, together with an elaborate Quichua grammar. Dr. Roxo Mesia was professor of Quichua in the University of San Marcos, at Lima, and wrote a grammar. Four more also appeared, and the other languages of Peru were not neglected. Fernando de Carrera, the Cura of Chiclayo, produced the only grammar of the language of the Coast Indians in 1644. Ludovico Bertonio, an Italian Jesuit, wrote a grammar and a copious dictionary of the Aymara language in 1612; while Bishop Oré, a native of Guamanga, in his "*Manuale Peruanum*" (Naples, 1602), is the only source from which we get specimens of the extinct Puquina and Mochica languages.

The cultivation of the native languages was not confined to grammars and dictionaries. The Jesuits, finding that the Indians were very ready to receive instruction through dramatic representations, as was the custom in the time of the Yncas, composed plays in Quichua, and one was acted by Indian lads at Juli, on the banks of Lake Titicaca, on the enmity between the serpent and

the seed of the woman. Other similar plays were acted at Cuzco, Potosi, and Lima. The lads repeated the dialogues with grace, feeling, and correct action, giving pleasure and satisfaction to the audiences. One of these plays, entitled "*Usca Paucar, Auto Sacramental de Maria Señora Nuestra en Copacabana*," has been preserved. Many songs were written in Quichua, all through the Spanish times, by Dr. Lunarejo and other scholars. The purest and most elegant is entitled "*La Despedida de Ariasa*."

The Ynca Indians thus retained their own language and traditions, while their upper class shared in such education as the Spaniards provided for the natives of European descent. But during long years the main object of education was to prepare aspirants for the priesthood. Religion flourished in Peru, and religious bodies multiplied exceedingly. Nor was distinguished piety wanting, for Peru has produced no less than four saints. San Francisco Solano was the first; the second was San Toribio Mogrovejo, who became Archbishop of Lima in 1578, and died in 1606, receiving his saintship from Pope Benedict XIII. in 1727. The third was Santa Rosa de Lima, the patron saint of that city, who was born in 1586, died in 1617, and was canonized in 1671. Her

festival, on the 26th of August, is celebrated at Lima by a splendid procession. The fourth was San Martin de Poras, a charitable negro. But in reality the best service done by the Peruvian clergy during Spanish times was the noble mission work of the Franciscans and Jesuits in the Montaña. In 1740 there were forty missions on the Marañon and Huallaga, containing 12,800 souls. The secular priests in villages were less reputable as a rule; they were often tyrannical and even cruel to their flocks, greedy for their fees, and regardless of their vows of celibacy.

Universities and colleges were founded in Peru very soon after the conquest, and their number increased during the two following centuries. Educational progress was slow, but there was progress, and both the European and Indian races of Peru showed readiness to learn and to profit by their studies when the opportunities were offered.

The University of San Marcos, in Lima, is the most ancient in the New World. Its creation was ordered by Charles V. in 1551, with a concession of all the privileges enjoyed by that of Salamanca; and in 1571 the existing buildings were commenced. They consist of a courtyard surrounded by a cloister, on the walls of which frescoes are

painted representing the sciences; with doors leading into the several lecture-rooms, and into the great hall of the University, in which are portraits of its principal learned men. The first graduate, born in Peru, was Don Juan de Balboa, a canon of the cathedral, and Professor of the Quichua language. In 1614 the Viceroy Marques de Montes Claros reformed and added to the statutes, founding professorships of theology and law. There were also chairs for professors of medicine, anatomy, mathematics, moral philosophy, rhetoric, Latin, and for a short time of Quichua. The ceremonies of the University were performed with great pomp and splendour, and the degrees were conferred in presence of the Viceroy and his court. In 1793 there were 313 doctors of San Marcos, of whom 172 were of law, 124 of theology, 12 of medicine, and 5 of arts. The College of San Carlos, at Lima, which still flourishes, was founded by the Viceroy Don Manuel Amat, in 1770, uniting with it the Jesuit College of San Martin, founded in 1585, and that of San Felipe, which was founded in 1592 for descendants of the conquerors. The Prince of Esquilache founded a school for the sons of noble Indians at Lima, to which was joined, in 1770, a school for teaching Latin, the number of scholars being 305 in the year 1793. The school of

medicine at Lima was not established until 1792, when the learned Dr. Unanue became professor of anatomy. There was also a school at Lima for orphans, at which 163 boys were taught in 1793, and several girl schools.

At Cuzco the University of San Antonio Abad was founded in 1598, the bishop being chancellor. The professorships were of theology, law, logic, Latin, medicine, and music, and in 1793 there were 122 students. The Prince of Esquilache founded a school for the descendants of conquerors at Cuzco, and the College of San Borja for noble Indians, which had 140 students. There was also a free school for fifty boys, and the College of San Andres for girls. At Arequipa the College of San Geronimo, for teaching Latin and theology, was founded in 1616, and there were seven free schools where the monks taught Latin and reading. A college was founded at Truxillo in 1621 for Latin, rhetoric, and theology; and at Guamanga the University of San Christoval was created in 1680, with the same professorships as at Cuzco, but only one or two were filled, from want of funds. Throughout Peru the monasteries had free schools; but the secular clergy taught nothing but catechism. Thus Peru had the three Universities at Lima, Cuzco, and Guamanga; and the people had at

least opportunities of receiving such education as would enable those who had the inclination, to continue their studies in after life.

As time went on, the Universities of San Marcos at Lima, of San Antonio Abad at Cuzco, and the few other colleges in Peru, began to produce writers of eminence among Peruvians born in the land. In 1639, Antonio de la Calancha, a native of Chuquisaca, wrote a Chronicle of the Augustine Order in Peru, which is full of valuable historical information. Bernardino de Cardenas, of La Paz, was the author of a history of Peru in 1634. Antonio de Leon Pinelo, a very learned Peruvian, published several works, including a bibliography of nautical and geographical books, a life of San Toribio Mogrovejo, and a treatise on lady's veils in 1641. Juan Hevia Bolaños wrote, in 1603, on commerce by sea and land. Miguel Sanchez de Viana, a native of Lima, published a work on the poetic art in Spain, in 1580; and Adrian de Alesio, of the same place, was the author of a life of St. Thomas Aquinas.

The University of Lima, in the last century, produced the learned Dr. Pedro de Peralta y Barnuevo, professor of mathematics and a great cosmographer. Among his numerous works, the best known is his epic poem, entitled "Lima

Fundada," noticed by Ticknor in his history of Spanish literature. Diego de Rivero was another Peruvian poet of eminence, a native of Arequipa, of whom Cervantes wrote :—

" Su divino ingenio ha producido
En Arequipa universal primavera."

From the same city came the poet Melgar, who met a patriot's death, with Pumacagua, in 1815.³

The arts of painting and sculpture were also cultivated in Peru, from the time of the conquest, mainly with a view to the adornment of churches. The great noblemen who came out as Viceroys were often liberal patrons of literature and art. The Prince of Esquilache, who arrived at Lima in 1624, was a poet of some celebrity. He was related to the Royal House of Aragon, and was connected with the Yncas by marriage. This Viceroy was a great patron of learning, and he brought several fine pictures to Lima. Other Viceroys also brought out valuable pictures for the churches, and a taste for art was thus created. Many Indians excelled as painters. They copied the master-pieces of Murillo and Rubens, and their own works have merit if not genius. Some

³ The satirical poet, Don Estevan de Terralla y Landa, the author of "*Lima por dentro y fuera*," was not a Peruvian by birth. He was a Spaniard, who came to Peru in about 1730.

fine pictures by native artists may be seen in the church of Azangaro, and at Santa Ana in Cuzco. But many have been improperly sold. The Indians of Quito also excelled as painters, those of Guamanga as sculptors.

Towards the latter part of the eighteenth century, scientific studies began to receive attention in Peru. All the educated classes were interested in the famous expedition which came out from France to measure an arc of the meridian near Quito in 1735, and thus determine the shape of the earth. M. Godin, one of the learned members of the expedition, became professor of mathematics at the University of San Marcos in 1740 ; and successfully continued the interest which had been temporarily aroused.⁴ The botanical expeditions sent out by Spain a few years later, gave fresh zest to scientific research. In 1776, Don Francisco Renquifo discovered the chinchona-tree, yielding grey bark,

⁴ M. de Pauw published a work at Berlin in two volumes, in 1768, entitled "*Recherches Philosophiques sur les Americains*," in which he disparages the mental and moral qualities of the Spanish Americans. He declared that the University of San Marcos had produced no one person who was capable of writing even a bad book, and that when M. Godin was professor there he did not find one student who understood his lectures. These slanders have been refuted by Velasco in his "*History of Quito*," and more recently by the author of "*Bosquejo de la Fundacion y Progreso de la Insigne Universidad Mayor de San Marcos de Lima*." (Lima, 1854.)

in the province of Huanuco, and in 1778 the eminent botanists, Ruiz and Pavon, accompanied by two artists, arrived at Lima. Tafalla was afterwards associated with them, and several years were devoted to the botanical survey of the forests of Huanuco and Huamalies. Their example inspired the studies of Franco Davila, an eminent Peruvian botanist, who was for many years Director of the Cabinet of Natural History at Madrid during the reign of Charles III.

The proof that the visits of learned physicists and naturalists had a lasting influence on the studies of Peruvians, and that their imaginations only needed such studies to explore new fields of research, is furnished by the scientific labours of Dr. Gabriel Moreno and Dr. Cosme Bueno, and by the "*Mercurio Peruano*." This scientific periodical was published during the last decade of the last century, its principal contributor being Dr. Hipolito Unanue, who, with the other contributors, formed the Society of Lovers of their Country at Lima.⁵ The "*Mercurio Peruano*" contains papers on statistics, botany, physical geography, and archæology, reports on earthquakes, and other phenomena, accounts of the exploring work of Father Girbal, and other missionaries in the Montaña, and some

⁵ Sociedad Academica de Amantes del Pais de Lima.

admirable geographical and statistical monographs on provinces of Peru. At that time Peru also had, in Andres Baleato, an able cartographer.

The declaration of independence, which destroyed all monopolies, and enabled Peruvians to open free and unrestrained intercourse with Europe, did not find them unprepared for the change. Education was narrow and limited in Peru, but it was provided, and the scientific and literary efforts of many Peruvians in the previous century, proved that the education supplied by the colleges bore good fruit. Men's minds had been trammelled and confined, but they had not been left fallow, when the barriers against free intercourse with the rest of the world were broken down. Many Peruvians then began to visit Europe, and to study in its universities, while the means of acquiring knowledge were increased and widened in the country itself. The people could not at once reach the educational and moral stand-point of European education. It is a slow and difficult process, and Peru labours under many disadvantages. Those who know the country, know that there is progress. Every decade shows some advance, often slight, but always in the right direction. There must be patience.

Meanwhile there is really no lack of literary activity. In Dr. Francisco de Paula G. Vigil, Peru

has produced a bold and sagacious scholar of extensive learning, and keen intellect. His great work entitled "A Defence of Governments against the Pretensions of the Court of Rome,"⁶ was a remarkable book for a Catholic Priest to write. It assails the right of the Pope to confirm bishops, and Dr. Vigil strengthens his arguments by appeals to the usages of antiquity, which display a wealth of erudition. From the subject of papal aggression he passes to the social condition of the clergy, and, with great eloquence, advocates the abolition of perpetual monastic vows, and the marriage of priests. He asks—"Would the parish priest be less useful if he was married? Kind, hospitable, learned, the husband of one wife, as the Scripture directs, governing his house well, and holding his children in subjection, he would preach not only with his word but by his example, which is the more true and efficacious preaching." The work is in six volumes, and gives evidence of the profound erudition and talent of the author. It procured for him the distinction of a bull of excommunication dated June, 1851, to which he published a telling rejoinder. Dr. Vigil led a studious and blameless life. He was for many years curator of

⁶ "*Defensa de la autoridad de los Gobiernos*," &c. 6 vols. (Lima, 1852.)

the public library at Lima, and died on June 10th, 1875.

Political writings are numerous, and generally of little value. But there are exceptions, and among them the works of Colonel Espinosa take a high rank. In his "*Herencia Española*" he ascribes all the misfortunes of Peru to the selfish policy of Spain in viceregal times. The book is ably written, and the Colonel sets forth the causes of corrupt government in Peru in a masterly style, sparing his own countrymen as little as the descendants of their oppressors. A still more remarkable work is his "*Diccionario Republicano*," published in 1855, which is composed of essays on the various questions that receive consideration from politicians. In Juan Espinosa the Peruvians have had a countryman to whom they owe much. Regardless of their prejudices, yet loving his country, he has boldly and fearlessly told them the truth.

The history of their country has received much attention from Peruvians of the Republic. Don Mariano Rivero, of Arequipa, devoted many years to the study of Ynca antiquities, which resulted in the publication of a magnificent work at Vienna, entitled "*Antigüedades Peruanas*," which has been translated into English at New York.⁷ It is a

⁷ By Dr. Hawks, 1853.

most valuable work, and concludes with a stirring address to Peruvian youth. "May my disclosures," he exclaims, "quicken their enthusiasm, and make them understand that the very dust they tread on, palpitated, lived, felt, thought in olden times ; that justice must be awarded sooner or later to each nation ; that Greece and Rome are not the only Empires which serve as food to a generous imagination, and that at their feet lies buried a shipwrecked civilization." Rivero did not write in vain. His countrymen have followed his example, and several have devoted themselves to antiquarian and historical researches. Dr. de la Rosa has discovered and printed a lost part of the Chronicle of Cieza de Leon ; Dr. Honorio Mossi brought out a new and elaborate Quichua grammar in 1860, and in the same year Don Sebastian Lorente published his excellent History of Peru, in three volumes. Don Manuel Fuentes has edited six interesting volumes of memoirs, written by Spanish Viceroys, reviewing their administrations ; also a new edition of the "*Mercurio Peruano*," and he has written a valuable history of the capital, called "*Estadística de Lima*." This work, in a popular form and profusely illustrated, has been published at Paris, in both French and English. Recently Don Ricardo Palma has published an interesting series of tales

and traditions relating to the colonial epoch of Peru.

The profession of law in Peru has been made illustrious by such men as Mariategui, Rospigliosi, and Gregorio Paz Soldan ; and while Bello, at the Chilian University, has secured a European reputation as an international lawyer, Santistevan has shown that legal studies are not neglected in Peru, by the publication of his "*Derecho Peruano*."

The labours of Unanue, and the men of science of the last century, have been zealously continued by Peruvians in our time, and the encouragement of scientific research by the Government has been liberal and discriminating. The great geographical works of Mariano Felipe Paz Soldan were published at the expense of the Government in 1862 and 1877. They were accompanied by an atlas of maps of the departments and plans of the principal towns, which will probably hold its ground as the best and most complete, until the time comes for the execution of a trigonometrical survey of Peru. But the exhaustive labours of Don Antonio Raimondi will yield the most complete results, and their publication reflects honour on the Government. Raimondi is a native of Milan, and an accomplished geographer and naturalist. He went to Peru in 1850, and has since explored

every part of the Republic, surveying, collecting, and annotating. His labours in the field having been completed, Dr. Raimondi now devotes himself to preparing them for publication. The first fruits were his topographical account of the department of Ancachs, and of its mineral wealth, which appeared, with a map engraved on steel, in 1873. The first volume (*Parte Preliminar*) of his great work describes the methods used for investigation in the various branches of science, and gives a personal narrative of the author's journeys, during nineteen years, over the length and breadth of the land. He dedicates it to the youth of Peru, of the adopted country which has received him so hospitably. The work itself will consist of six parts; the first being devoted to geography and meteorology; the second to the geology of Peru; the third to the mineralogy and the analysis of thermal springs; the fourth and fifth to botany and zoology; and the sixth to ethnology and antiquities. The publication of this magnificent work does honour alike to Dr. Raimondi and to the Peruvian nation. He has given up his life to his adopted country, and Peru has known how to value a gift so precious.

Poetry of considerable merit occasionally issues from the Peruvian press. Such is the poem by

Marquez, entitled "La Flor de Abel," which its reviewer, Colonel Espinosa, describes "as a defence of innocence and charity in a heroic combat against the worldly selfishness which devours us." The plot is original and ingenious, and there are some lines of great beauty. Don Clemente Althaus is another poet whose works rise above mediocrity; and a large proportion of the rising generation of writers have indulged in the composition of verses. Many are well-informed, polished by travel and extensive reading, and devoted to their country's welfare. In general literature they have displayed considerable industry and talent. The "Revista de Lima" is a successor of the "Mercurio Peruano," though a long period elapsed between the two publications. The "Revista" contains archæological, biographical, and historical articles and reviews, and discussions on financial and politico-economical questions. They are generally ably written, in an enlightened and liberal spirit; and among the contributors have been the late President Pardo, Dr. Fuentes, Lavalle, Ulloa, Flores, Masias, and the painter Laso.

Peruvians have also exhibited skill as artists, and most of the fine copies of great masterpieces in the churches are by natives. A school of design

was established at Lima in 1832, and such painters as Laso and Monteros have obtained eminence in their art. Perhaps the finest example of Peruvian art is the large picture of the funeral obsequies of the Ynca Atahualpa, by Monteros,⁸ which was in the Lima International Exhibition. The Congress of Peru presented the artist with 4000*l.* for it in 1867, but he was carried off by a fever which raged at Callao in the following year. The sculptures of Luis Medina, a native of Ayacucho, in the soft white gypsum of that region, also display no mean talent. At the Lima Exhibition he had a fine group representing the descent from the cross, a sleeping Venus, statues of an Indian man and woman, and some busts. Medina obtained a silver medal and 500 *soles*, equal to 100*l.*, for his sculptures.

The spread of education has made progress, though slow progress, among the mass of the people, since the declaration of independence. Additional colleges have been established in the large towns, and many schools in the villages. There is a department of instruction under the minister at Lima, and commissions in the depart-

⁸ A photograph of this picture forms the frontispiece to the second volume of Hutchinson's "Two Years in Peru." (Sampson Low, 1873.)

ments and provinces, each consisting of two persons, with the prefects and sub-prefects presiding. The universities are of two classes, higher and lower, but only in Lima is there a university of the former class. It consists of faculties of theology, jurisprudence, medicine, sciences, political economy, and letters. There are five lesser universities at Cuzco, Arequipa, Ayacucho, Puno, and Truxillo. The State is also credited with the support of 33 colleges for men, and 18 for women in the principal towns, 1578 schools for boys, and 729 for girls. The expenditure on education was estimated at 2,124,407 *soles* (431,102*l.*) a year in 1877. But many of these public schools and colleges only exist on paper; and the statistics respecting private schools are very imperfect. Señor Leubel has drawn up a return, according to which there are twenty-one public colleges, and twenty-four private colleges in Peru, 450 public, and 206 private schools, with a total of 32,555 scholars. For girls there are 157 colleges and schools, with 6351 scholars. This gives one child at school for every eighty inhabitants within the teachable districts. Only one bishopric has been added under the Republic to the original four, namely, that of Chachapoyas, which was created in 1840.

Peru has assuredly made a great advance since

she threw off the Spanish yoke ; how great, can only be judged by those who are intimately acquainted with her educated classes and with the peculiar difficulties which have impeded her progress. The Government has been in the hands of reckless speculators, whose operations have burdened the country with debt, and destroyed its credit. But the people have advanced in spite of these and other drawbacks. It is education, and perhaps adversity, that will at length give Peru her greatest need, a really stable and good administration. This little work on the land of the Yncas, may well conclude with the words in which brave old General Miller, before he died, expressed a hope for her future. "With Peru's immense resources, a good Government, and tranquillity, what may not be expected ! Who can be blind to the genius and great abilities of the Peruvian youth ? But every nation has its beginning, an inevitable, and perhaps rough ordeal to undergo, and Peru must not expect to make a leap that no other country has been able to achieve."





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